Technical Submittal

Item	Description	Brand	Logo	Approval	Company Origin
	ASD-Aspirating Smoke Detector	Securiton	SECURITON	UL Listed & FM Approved	Switzerland

SecuriSmoke ASD

Product Catalogue 2026

1. Introduction

SecuriSmoke ASD 2000 product range: The start of a new era of fire protection

SecuriSmoke ASD 2000 is founded on more than 50 years of experience and expertise in early fire detection using aspirating smoke detectors. The new product range is equipped with numerous innovative features and functions and sets new technological standards.
The SecuriSmoke ASD 2000 product range impresses with its simple and efficient work steps – virtually tool-free – ranging from planning, installation and commissioning to document maintenance. Supported by the latest software tools, operation is simple and intuitive even for occasional users. A device with four sampling channels covers many country-specific guidelines and project-specific requirements in the best possible way. Separate airflow monitoring enables precise localisation and identification of deviations per channel

SecuriSmoke ASD 53x product range: Our tried-and-tested ASD models - as reliable as ever

Aspirating smoke detectors from Securiton are among the most precise and reliable early warning systems against fire in existence. The SecuriSmoke ASD detector series impresses by virtue of its unrivalled capabilities. Developed in Switzerland and manufactured in Germany, the detectors are particularly reliable and robust. Their sophisticated detection technology means they can detect incipient fires immediately: whether in IT racks, production halls or large deepfreeze areas, Securiton has the perfect fire protection solution for all safety requirements. SecuriSmoke ASD detectors are available in four models, with the main difference between them being the scale of monitoring area. This means that protection without compromise is now even more cost-effective in small premises. All detectors can be seamlessly integrated into the SecuriFire fire detection system and are extremely durable thanks to their robust design.

2. System Comparison Chart ASD 2000 series

	ASD 2004	ASD 2002	ASD 2001
Channels	4	2	1
Smoke sensor	2	2	1
Smoke sensor technology	High-sensitivity smoke sensor with 0.001 – 30 %obs/m sensitivity High-power LED, internal CF Filter and digital lint filter		
Monitoring area	5760 m²	5760 m²	3000 m²
Pipe length -aggregated -furthest hole	700 m 4x 90 m	700 m 2x 115 m	400 m 150 m
Max number of holes			
Class A	62	62	31
Class B	160	160	80
Class C	240	240	120
Integration in SecuriFire fire system	BX-OI3	BX-O2I4	BX-O2I4
Interfaces	BLE, Relays, Inputs		
Optional modules	In preparation		
Smoke level indicator	Yes	Yes	Yes
Configuration/Maintenance/Intervention	SecuriSmoke Mobile control via Bluetooth (BLE)		
Calculation of sampling pipes	ASD PipeFlow 3D		

System Comparison Chart ASD 53x series

	ASD 535	ASD 533	ASD 532	ASD 531
Channels	1/2	1/2	1	1
Smoke sensor	High-sensitivity smoke sensor with high-power LED, LVSC smoke chamber and patented lint filter			
Monitoring area	5760 m²	1920 m² / 3840 m²	1280 m²	720 m²
Pipe length	2 x 300m	2 x 200m	120m	75m
Max number of holes				
Class A	2 x 18	2 x 16	8	6
Class B	2 x 56	2 x 50	12	8
Class C	2x 120	2 x 50	16	12
Direct integration in SecuriFire fire detection system	Yes, with XLM-35 module (alarm, pre-signal, faults, day/night sensitivity switching, reset etc.)			
Interfaces	Relays, USB, RS485, Inputs	Relays, USB, Inputs	Relays, Ethernet, RS485, Inputs	Relays, Inputs
Optional modules	4 slots for: RIM35, SIM35, XLM35, MCM35	4 slots for: RIM35, SIM 35, XLM35, MCM35	2 slots for: RIM36, SIM35, XLM35	2 slots for: RIM36, XLM35
Smoke level indicator	Optional (version -3 and -4)	No	Yes	No
Programming (PC tool)	ASD Config	ASD Config	ASD Config	Not available
Configuration	EasyConfig	EasyConfig	EasyConfig	BasiConfig
Calculation of sampling pipes	ASD PipeFlow	ASD PipeFlow	ASD PipeFlow	ASD PipeFlow

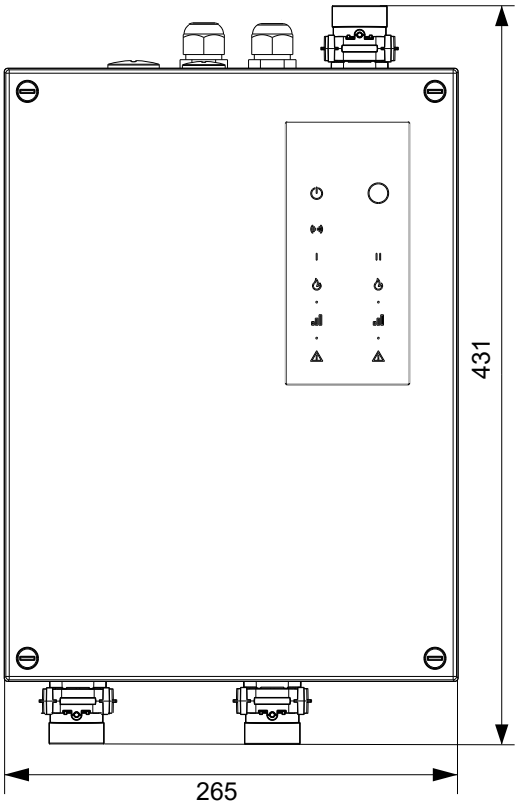
Description

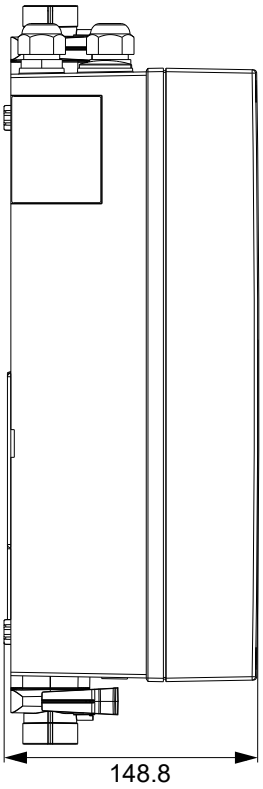
The ASD is an aspirating smoke detector with highly sensitive smoke sensors; it samples and checks ambient air via a sampling pipe tube network. Airflow monitoring ensures that the sampled air flows to the smoke sensors in the correct amount and at the correct speed.

If the concentration of smoke particles exceeds an adjustable threshold value, the ASD triggers an alarm. In addition, a second alarm and 3 pre-signals can be configured. The ASD forwards the signals via relays to other fire alarm control panels.

Standards-compliant planning and project management is carried out with the PC application PipeFlow. The parameters calculated in this way are transferred to the ASD during commissioning using the MobileConfig mobile application. MobileConfig offers other functions for control and maintenance of the ASD as well as for reading out current events and live values.

Dimensions in mm (ASD 2002)





Product implementations

The ASD is available in the following versions:

Type	Number of channels	Number of airflow sensors	Number of smoke sensors
ASD 2001	1	1	1
ASD 2002	2	2	2
ASD 2004	4	4	2

System limits

	Class A	Class B	Class C
ASD 2001			
Maximum overall length of the sampling pipe tube network per ASD (m)	400		
Maximum overall length of the sampling pipe tube network per channel (m)	400		
Maximum overall length from the detector housing to the farthest sampling hole (m)	90	110	150
Maximum number of sampling holes per ASD	31	80	120
ASD 2002			
Maximum overall length of the sampling pipe tube network per ASD (m)	700		
Maximum overall length of the sampling pipe tube network per channel (m)	400		
Maximum overall length from the detector housing to the farthest sampling hole per channel (m)	80	100	115
Maximum number of sampling holes per ASD	62	160	240
Maximum number of sampling holes per channel	31	80	120
ASD 2004			
Maximum overall length of the sampling pipe tube network per ASD (m)	700		
Maximum overall length of the sampling pipe tube network per smoke sensor (m)	400		
Maximum overall length from the detector housing to the farthest sampling hole per channel (m)	70	90	90
Maximum number of sampling holes per ASD	62	160	240
Maximum number of sampling holes per channel	15-16	40	60

Technical data

Supply voltage range		14 to 30	VDC
		UL: 16.4 to 27	
Nominal voltage		24	
Maximum power consumption at 24 VDC, measured at maximum fan speed (not under load):			
ASD 2001	Normal state	412	mA
	Alarm simultaneously on SSD I, SSD II	425	
ASD 2002	Normal state	447	
	Alarm simultaneously on SSD I, SSD II	468	
ASD 2004	Normal state	467	
	Alarm simultaneously on SSD I, SSD II	490	
Switch-on current peak at 24 VDC		500	mA
		for a maximum of 10	ms
Sampling pipe length	Complies with general system limits according to EN 54-20		
Sampling pipe diameter, typical (inner/outer)		20/25	mm
Maximum number of sampling holes	Complies with general system limits according to EN 54-20		
Sampling hole diameter	∅ 2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5 / 5.5 / 6 / 6.5 / 7		mm
Response range, smoke sensor sensitivity	EN 54-20, Class A, B, C		
Protection type according to IEC 60529 / EN 60529		IP 54	
Operating temperature range		-20 to +60 UL: max. +40	°C
Maximum permissible temperature fluctuation of detector housing and sampling pipe in operation (condensation not permitted)	Sensitivity range 0.01 to 0.5%/m	Sensitivity range ≥ 0.5%/m	
	60	80	K
Maximum permissible storage temperature of the detector housing without condensation		-30 to +70	°C
Ambient pressure difference between detector housing and sampling pipe (sampling holes)		Must be identical	
Ambient condition humidity detector housing, briefly without condensation		95	% rel. humidity
Ambient condition humidity detector housing sampling pipe continuous		70	
Maximum load capacity relay contact		50 (UL: maximum 30)	VDC
		1	A

		30	W
Maximum load capacity of the open collector output (dielectric strength 30 VDC)		100	mA
Terminal cross-section power supply		2.5	mm^2
Connection terminal cross-section inputs, outputs		1.5	
Cable screw unions for cable diameters	∅ 5 to 12 (M20) / ∅ 9 to 18 (M25)		mm
Sound pressure level compliant with ISO 3744 at fan speed	7,000	20,000	RPM
	21	40	dB (A)
Housing	Material	PC ABS	
	Flammability class UL	94-V0	
	Colour compliant with NCS	S 8005 R80B (anthracite)	
Approvals		EN 54-20	
VdS certification		G 225014	
Dimensions		265×431×148.8	mm
Weight ASD 2001 (with SSD)		3,415	g
Weight ASD 2002 (with SSD)		3,981	
Weight ASD 2004 (with SSD)		4,120	
Weight SSD 10x0		388	

SECURITON

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6. Aspirating Systems ASD 53x family

6.1. ASD Base Units

Aspirating Smoke Detector

ASD 531 including SSD 31 **11-2000002-01-04**

The SecuriSmoke ASD 531 aspirating smoke detector is designed for smaller monitoring areas and for the easiest possible handling.
The ASD 531 is equipped with a highly sensitive smoke sensor SSD 31 using a single sampling pipe network.
The housing provides the option for two expansion modules.
Commissioning and configuration are done directly on the device without any software tool.
For planning the ASD PipeFlow software allows an optimized design of any installation.

Mains voltage:	14 to 30 VDC
Power consumption:	77 mA
Protection class:	IP54
Operating temperature:	-10°C to +55°C
Weight of basic version:	1950 g
Dimensions (HxWxD):	290 x 195 x 140 mm
Material:	ABS-Blend, UL 94-V0
Color:	grey (RAL 280 70 05) anthracite (RAL 300 20 05)

Approvals

VdS-Approval:	G 215100
UL-Approval:	S 25264
FM-Approval:	3045947
Declaration of Performance (DoP):	CPR-10-16-106

Aspirating Smoke Detector

ASD 532 **11-2000003-01-04**

The SecuriSmoke ASD 532 aspirating smoke detector is designed for small to midsize monitoring areas.
The ASD 532 base unit is provided for a highly sensitive smoke sensor SSD 532 (to be ordered separately) for a single sampling pipe network.
The measured smoke level is indicated on a bar graph display.
The housing provides the option for two expansion modules.
Commissioning and configuration are done either directly on the device or via the ASD Config software tool.
For planning the ASD PipeFlow software allows an optimized design of any installation.

Mains voltage:	14 to 30 VDC
Power consumption:	100 mA
Protection class:	IP54
Operating temperature:	-20°C to +60°C
Weight of basic version:	2000 g
Dimensions (HxWxD):	290 x 195 x 140 mm
Material:	ABS-Blend, UL 94-V0
Color:	grey (RAL 280 70 05) anthracite (RAL 300 20 05)

Approvals

VdS-Approval:	G 215101
UL-Approval:	S 25264
FM-Approval:	3045947
Declaration of Performance (DoP):	CPR-10-16-107

Aspirating Smoke Detector

ASD 533-1

ASD 533-2

ASD 533-1	**1 Sampling pipe / including SSD 533**	**11-2000001-01-04**
ASD 533-2	**2 Sampling pipes / including SSD 533**	**11-2000059-01-01**

The ASD 533 aspirating smoke detector has the task of continuously taking air samples via a sampling pipe tube network from a monitored area and feeding the samples to a smoke sensor.
The ASD 533 consists of the detector housing and a sampling pipe tube network. The sampling pipe has several sampling holes whose size is such that each hole extracts the same amount of air. The sampling pipe may be I-, U-, T-, H-, or E-shaped. The sampling pipe is symmetrically designed in principle. Asymmetrical sampling pipe tube networks can also be implemented using the “ASD PipeFlow” calculation software.

Mains voltage:	10.5 to 30 VDC
Power consumption:	210 mA
Protection class:	IP54
Operating temperature:	-20°C to +60°C
Weight of basic version:	3255 g
Dimensions (HxWxD):	265 x 397 x 148 mm
Material:	ABS-Blend, UL 94-V0
Color:	grey (RAL 280 70 05) anthracite (RAL 300 20 05)

Approvals

VdS-Approval:	G 212163
UL-Approval:	S 25264
FM-Approval:	3045947
Declaration of Performance (DoP):	CPR-11-13-100

Aspirating Smoke Detector

ASD 535-3

ASD 535-4

ASD 535-3	1 Sampling pipe / Detector, 1 Smoke level display	**11-2000017-01-02**
ASD 535-4	2 Sampling pipes / Detectors, 2 Smoke level displays	**11-2000018-01-02**

The SecuriSmoke ASD 535 aspirating smoke detector is designed for universal applications mainly for midsize to large monitoring areas. The ASD 535 base units provide space for 1 or 2 highly sensitive smoke sensors SSD 535 (to be ordered separately) for 1 or 2 sampling pipe networks.

The measured smoke level can be indicated on a bar graph display. The housing provides the option for four expansion modules.
Commissioning and configuration are done directly on the device or via the ASD Config software tool.
For planning the ASD PipeFlow software allows an optimized design of any installation.

Mains voltage:	10.5 to 30 VDC
Power consumption:	260 mA
Protection class:	IP54
Operating temperature:	-30°C to +60°C
Weight of basic version:	3550 g
Dimensions (HxWxD):	397 x 265 x 146 mm
Material:	ABS-Blend, UL 94-V0
Color:	grey (RAL 280 70 05) anthracite (RAL 300 20 05)

Approvals

VdS-Approval:	G 208154
UL-Approval:	S 25264
FM-Approval:	3045947
Declaration of Performance (DoP):	CPR-10-16-101

Aspirating Smoke Detector Heavy Duty

ASD 535-3HD

ASD 535-4HD

ASD 535-3HD	1 Sampling pipe / Detector	**11-2000036-01-02**
ASD 535-4HD	2 Sampling pipes / Detectors	**11-2000037-01-02**

The SecuriSmoke ASD 535-HD aspirating smoke detector is designed for special applications in very dusty and dirty monitoring areas. The ASD 535 base units provide space for 1 or 2 highly sensitive coated smoke sensors SSD 535CP (to be ordered separately) for 1 or 2 sampling pipe networks.

The measured smoke level can be indicated on a bar graph display. The housing provides the option for four expansion modules. The device can be expanded with the overvoltage protection board OPB911 up to 8kV. Commissioning and configuration are done directly on the device or via the ASD Config software tool.
For planning the ASD PipeFlow software allows an optimized design of any installation.

Mains voltage:	10.5 to 30 VDC
Power consumption:	260 mA
Protection class:	IP66
Operating temperature:	-30°C to +60°C
Weight of basic version:	3550 g
Dimensions (HxWxD):	397 x 265 x 146 mm
Material:	ABS-Blend, UL 94-V0
Color:	grey (RAL 280 70 05) anthracite (RAL 300 20 05)

Approvals

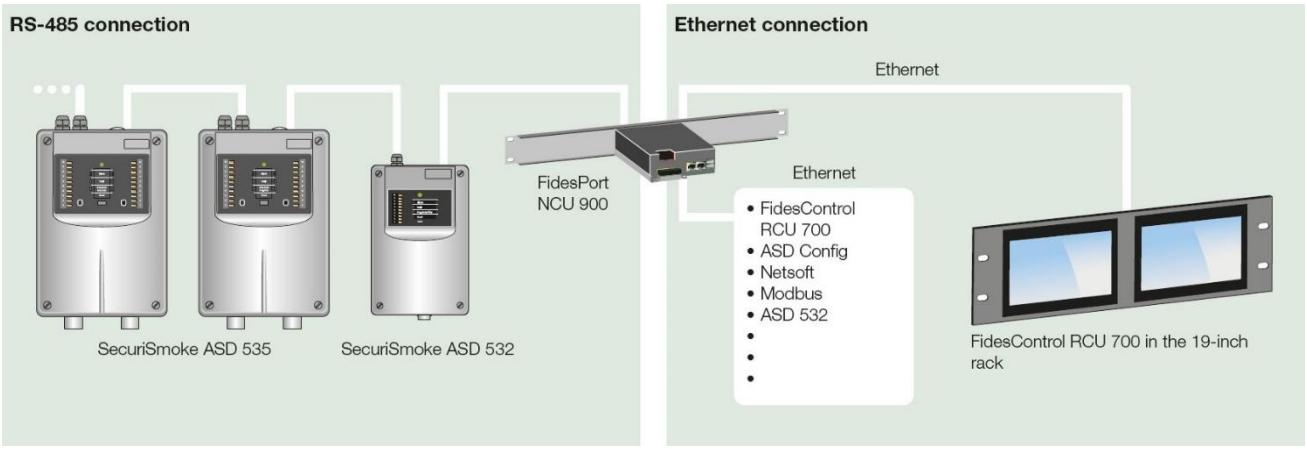
VdS-Approval:	G 208154
UL-Approval:	S 7197
FM-Approval:	3056227
Declaration of Performance (DoP):	CPR-11-20-111

Accessories		
Overvoltage protection OPB 911 coated	OPB 911 CP	11-2200038-01-01

8. ASD Networking and Visualization

8.1. FidesNet

FidesNet makes it possible to connect multiple SecuriSmoke aspirating smoke detectors in a network while also enabling decentralized access via one or more FidesControl RCU 700 units. The performance scope includes RS-485 networking plus the visualization and operation of all connected ASDs on the FidesControl RCUs linked in the network. Various other functions can be implemented in addition to visualization and operation. The FidesNet networking solution offers the possibility of connecting the special fire detectors on the field level to superordinate systems via the FidesPort NCU 900 over Modbus or SNMP protocol.



FidesNet			
Hardware			
	Remote Control Unit	RCU 700	11-5000004-01-03
	Network Communication Unit	NCU 900	11-5000003-01-03
	RCU 700 Mounting frame 19-1	RMF 19-1	11-5000006-01-01
	RCU 700 Mounting frame 19-2	RMF 19-2	11-5000006-02-01
	RCU wall housing RWH	RWH	11-5000010-01-01

8.2. Netsoft

The NetSoft software tool visualises live data from the aspirating smoke detectors directly on the computer. From one central point, you have a complete overview of the entire ASD network.

The main benefits of NetSoft are:
- One tool for visualization, operation, configuration
- Clearly arranged graphic of the whole installation
- Color status display for simple interpretation
- Event monitoring, remote control and event logging
- Trending view
- Configuration options for technicians

Please contact your local sales representative if you wish more information about how to proceed if you have a project where NetSoft is used.

SecuriLink Netsoft		
Netsoft for 0 - 10 ASD's	NetSoft 10	VE100471
Netsoft for 11 – 30 ASD's	NetSoft 30	VE100472
Netsoft for 31 – 50 ASD's	NetSoft 50	VE100473
Netsoft for 51 – 160 ASD's	NetSoft 160	VE100474
Netsoft for 161 - plus	NetSoft max	VE100475

8.3. Multichannel ASD

SecuriSmoke ASD is available as 4 and 8-channel versions for connecting large tube networks to the ASD. On request, the multichannel ASDs can also be modularly expanded with a channel identification capability for pinpointing the smoke source. The channel identification information can be fed direct into FidesNet or NetSoft.

Manifold

MF4 25 ABS **11-2300127-01-01**

With the Manifold, four to eight intake lines can be routed to one ASD.
The Manifold is plugged onto the inlet of the ASD housing. Due to the conical shape of the inlet and the precise fit, the self-locking connection is tight. No adhesive is required.

Operating temperature:	-30°C to +60°C
Weight of basic version:	250 g
Dimensions (HxWxD):	166 x 105 x 54 mm
Material:	PC / ABS
Color:	Anthracite violet (RAL 300 20 05)

Detector Box

REK 511 **11-2300147-01-01**

For the channel identification, cabinet monitoring or localization of a fire in a separate room. To use together with the SSD 515-xS smoke detector.

Operating voltage:	18 to 28 VDC
Power consumption:	30 mA
Protection class:	IP53
Operating temperature:	-0°C to +50°C
Weight of basic version:	406 g
Dimensions (HxWxD):	195 x 122 x 85 mm
Material:	ABS
Color:	light grey (RAL 7035)

9. Tubes and Fittings for Sampling Pipe

The materials for the sampling pipes are part of the VdS-Approval. For this reason, only materials approved and listed by Securiton may be used to build the system.
The pipe material is available in various plastics and metals. Most of the individual plastic pipe parts are glued.
The flexible pipe material for equipment and object monitoring is bendable.
The metal pipes are connected by press fitting.
The necessary tools such as pliers or pipe cutters can be purchased from specialist dealers.

9.1. ABS Tubes and Fittings

ABS tubes and fittings with outer diameter of 25 mm. Basic colour is red, other colours and materials on request.
The most important mechanical properties of ABS are impact resistance and toughness.
Temperature range for applications: -30°C to +60°C
All ABS tubes are inscribed: «FIRE ALARM AIR SAMPLING PIPE DO NOT CUT OR PAINT»

ABS tubes and fittings

Tube and fittings			
	Sampling tube d=25mm, ABS red 3m	TU 25 ABSRED	11-2300049-01-01
	Bend 90° d=25mm, ABS red delivery unit: 10 pieces	BE 25 ABSRED	11-2300050-01-01
	Angle 90° d=25mm, ABS red delivery unit: 10 pieces	AN 25-90 ABSRED	11-2300057-01-01
	Angle 45° d=25mm, ABS red delivery unit: 10 pieces	AN 25-45 ABSRED	11-2300052-01-01
	T-piece d=25mm, ABS red delivery unit: 10 pieces	TP 25 ABSRED	11-2300053-01-01
	Socket d=25mm, ABS red delivery unit: 10 pieces	SO 25 ABSRED	11-2300051-01-01
	Screw-junction piece d=25mm, ABS red delivery unit: 10 pieces	SJ 25 ABSRED	11-2300055-01-01
	End cap d=25mm, ABS red delivery unit: 10 pieces	EC 25 ABSRED	11-2300054-01-01
	Flex tube d=25mm, ABS red 30cm	FH 25 ABSRED Set03	11-2300121-01-01
	Flex tube d=25mm, ABS red 1m	FH 25 ABSRED Set1	11-2300120-01-01

Compressed-air connection

CC 25 ABS **11-2300065-01-01**

Compressed-air connection for tube TU 25 ABS for cleaning the aspirating tube.

Material:	ABS
Color:	grey

ASD 535

Aspirating smoke detector

From production version 131221 and FW version 01.10.xx

The ASD 535 aspirating smoke detector performs the task of taking continuous air samples via one or two sampling pipe networks from a monitored area and feeding the samples to one or two smoke sensors.

The ASD 535 consists of the detector housing and one or two sampling pipe tube networks. The sampling pipes have several sampling holes whose size is such that each hole withdraws the same amount of air. The sampling pipes may be I-, U-, T-, H-, or E-shaped. The sampling pipes are usually symmetrically designed. Asymmetrical sampling pipe tube networks can also be implemented using the "ASD PipeFlow" calculation software.

Fig. 1 ASD 535-4

Description

Integrated in the detector housing is a high-speed fan which, in conjunction with the sampling pipe, ensures uninterrupted air supply to the detector housing. Airflow monitoring detects any blockages or breaks in each of the sampling pipe networks.

Available versions:

- ASD 535-1 — for 1 sampling tube, and 1 smoke sensor without smoke level indicator;
- ASD 535-2 — for 2 sampling tubes, and 2 smoke sensors without smoke level indicator;
- ASD 535-3 ① — for 1 sampling tube, and 1 smoke sensor with smoke level indicator;
- ASD 535-4 ① — for 2 sampling tubes, and 2 smoke sensors with smoke level indicator.
- ASD 535-3 HD ① — like ASD 535-3, with increased IP protection and painted printed circuit boards;
- ASD 535-4 HD ① — like ASD 535-4, with increased IP protection and painted printed circuit boards.

① The descriptions for ASD 535-3 and -4 in this document also apply to the ASD 535-3 HD and -4 HD versions.

Usable smoke sensors:

- SSD 535-1 — Sensitivity range 0.5 to 10%/m
- SSD 535-2 — Sensitivity range 0.1to 10%/m
- SSD 535-3 — Sensitivity range 0.02 to 10%/m

Usable expansion modules (max. 4 units)

- XLM 35, ML-SFD, SLM 35, RIM 35, MCM 35, SIM 35, UIM 35

The ASD 535 can be linked to a higher level FACP by means of potential-free change-over contacts.

With the **XLM 35**, **ML-SFD** or **SLM 35**, the ASD 535 can be ideally connected to the SecuriFire and Integral fire alarm systems (with SLM also to SecuriPro).

The **RIM 35** enables the availability of all three pre-signal levels as well as the states "smoke sensor dirty" and "LS-Ü blockage" as relay contacts. The relays are freely configurable (via "ASD Config").

The **MCM 35** serves to record operating data.

Up to 250 ASDs can be networked with the **SIM 35**; they can then be visualised and operated using "ASD Config".

The ASD 535 aspirating smoke detector can be used for:

- **Equipment monitoring**: EDP systems, electrical distributors, switch cabinets, etc.
- **Space surveillance**: EDP rooms, clean rooms, warehouses, high-rack storage buildings, deep-freeze warehouses, hollow floors, protection of cultural objects, transformer stations, prison cells, etc.

In agricultural areas and applications as well as in areas with increased requirements for IP protection and resistance to moisture and corrosion, the **ASD 535-x HD** device version can be used.

The response behaviour of the ASD 535 has been tested in compliance with EN 54-20, Class A, B and C.

When setting up ASD 535 fire alarm systems, the information and specifications in "**Technical description ASD 535**" must be observed and adhered to. This includes among others:

- **General** — Section 1
- **Safety informations** — Section 1.2.2
- **Planning** — Section 4
- **Mounting** — Section 5
- **Installation** — Section 6
- **Commissioning** — Section 7
- **Operation** — Section 8

Opening the detector housing

Press the **rotary snap locks** down **firmly** with a screwdriver (min. No. 5) toward the housing base and then **turn** 90°. The position of the lock slit shows the current state:

- approx. 45° angled toward detector housing corner = closed
- approx. 45° angled toward detector housing edge = open

The rotary snap locks **must** snap into place.

The **housing cover** (control unit) is connected to the Main Board by a **flat cable**. Make sure that when the housing cover is lifted away the flat cable does not become damaged.

Connection

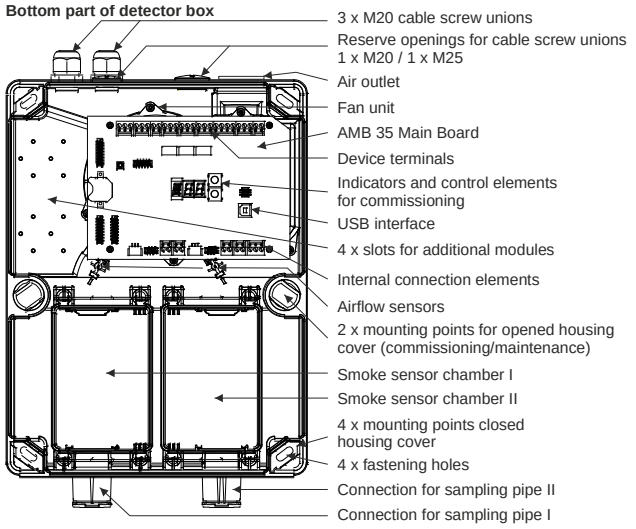

Bottom part of detector box
3 x M20 cable screw unions
Reserve openings for cable screw unions 1 x M20 / 1 x M25
Air outlet
Fan unit
AMB 35 Main Board
Device terminals
Indicators and control elements for commissioning
USB interface
4 x slots for additional modules
Internal connection elements
Airflow sensors
2 x mounting points for opened housing cover (commissioning/maintenance)
Smoke sensor chamber I
Smoke sensor chamber II
4 x mounting points closed housing cover
4 x fastening holes
Connection for sampling pipe II
Connection for sampling pipe I

Fig. 2 View inside the ASD 535

AMB 35 device connections

The electrical connection is implemented by means of plug-in terminals.

Term.	Signal	
1	+10.5 to +30 VDC ①	Main power supply line
2	0 V	
3	+10.5 to +30 VDC ①	Redundant power supply line
4	0 V	
5	+ Supply (for OC consumers)	
6	Output fault, OC (all events)	
7	Output alarm I, OC	
8	Output alarm II or freely programmable, OC	
9	unused	
10	Rel. 1 “(NO)”	Fault ②
11	Rel. 1 “(NC)”	
12	Rel. 1 “COM”	
13	Rel. 2 “NO”	Alarm I
14	Rel. 2 “NC”	
15	Rel. 2 “COM”	
16	Rel. 3 “NO”	Alarm II or freely programmable
17	Rel. 3 “NC”	
18	Rel. 3 “COM	
19	External reset input +	Optocoupler input
20	External reset input -	
21	+ F	(may be available at a later date)
22	DF	
23	-	
24	+ S	Connection MFU 535, REK 535 (available later)
25	DS	
26	-	

① UL/FM: +12.4 to +27 VDC
② The “Fault” relay has picked up in the normal state ➔ contact Te. 12/10 closed, 12/11 open (ASD 535 under voltage; no fault present).

AMB 35 internal connections

Terminal	Signal	
MOT / M-	Fan - (black wire)	
MOT / T	Fan tacho signal (white wire)	
MOT / M+	Fan + (red wire)	
OEM2 / AI-	Optocoupler inputs OEM2	• In some cases, actuations may **not** comply with the requirements of **EN 54-20**; thus, use only after consulting with the manufacturer. • The OEM inputs are **not** line monitored.
OEM2 / AI+		
OEM2 / St-		
OEM2 / St+		
OEM1 / AI-	Optocoupler inputs OEM1 ①	
OEM1 / AI+		
OEM1 / St-		
OEM1 / St+		

① The “**OEM1 / St**” input can also be used for activating the day/night control (priority over triggering from third-party detector).

Terminal assignment of the additional modules

The terminal assignments of the additional modules are shown in the corresponding data sheets (see “Article numbers and spare parts”).

Wiring principle

Examples of and information about wiring are found in Technical description ASD 535, T 131 192 E, Sec. 6.

Deploying smoke sensors

Smoke sensors are not fitted when the ASD 535 is delivered. They are application specific (according to required sensitivity range), purchased from the manufacturer and installed after the detector housing is mounted (see **Fig. 3**).

- The smoke sensors should always be removed from their protective packaging just before deployment in the detector housing.
- Depending on the situation (e.g. if there is a long time between mounting and commissioning or if the environment is very dusty due, for example, to construction), the smoke sensors should be installed just before commissioning the ASD 535.
- Before installing the smoke sensors, check that the protective screens against insects are properly fitted to the air inlet and outlet in the smoke sensor chambers.
- The smoke sensor chamber must be absolutely free of dirt and dust. Any waste or other materials resulting from mounting the detector housing must be removed.

The installation position of the smoke sensors depends on the particular smoke sensor chamber (I or II). The connectors of the smoke sensors are oriented toward the outside of the ASD housing. Incorrect installation positioning is prevented by the anti-twist rib on the smoke sensor housing.

The smoke sensors are fastened with the two lock clamps in the ASD housing. The electrical connection to the AMB 35 Main Board is accomplished with the supplied ribbon cable.

The smoke sensor chamber II on the ASD 535-1 and -3 (only one smoke sensor) remain open (insect protection screens and lock clamps are not fitted, air channels are closed).

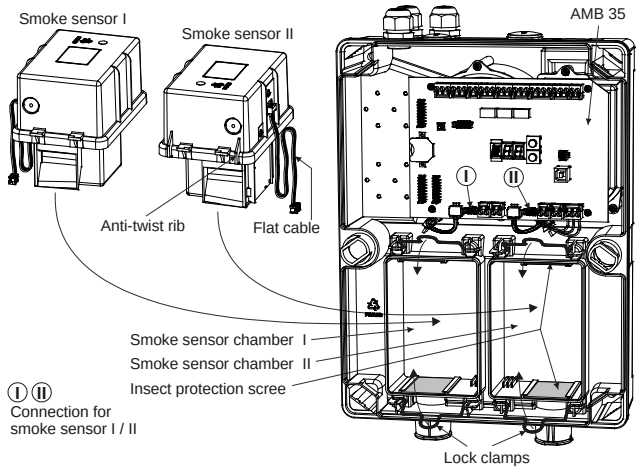


Fig. 3 Deploying the smoke sensors

Displays on the control unit

Several LEDs on the control unit indicate the current state of the ASD 535. The table below lists only the states for the ASD 535-1 resp. -3 (one smoke sensor / one sampling pipe). Except for the operation display, the displays are doubled for the ASD 535-2 resp. -4 (I and II).

Function / state	Operation	Alarm	Fault	Det. dusty / dirty	Smoke level ①
	green	red	yell.	yell.	yell.
System Off (no voltage)					
System inactive (external reset)	On		½ T		
Smoke sensor Off (from FACP)	On		½ T		
Idle state	On				
Blockage / pipe breakage, delay time running ②	On		1 T		
Blockage / pipe breakage, fault triggered	On		On		
Fan tacho signal lacking	On		On		
Fault triggered	On		On		
Pre-signal 1 (ASD 535-1 / -2)	On	2 T			
Pre-signal 2 (ASD 535-1 / -2)	On	1 T			
Pre-signal 3 (ASD 535-1 / -2)	On	½ T			
Smoke level 1–10 (ASD 535-3 / -4) ③	On				On
Pre-signal 1, 2, 3 (ASD 535-3 / -4) ③	On				1 T
Alarm	On	On			
Smoke sensor filter fault	On			2 T	
Smoke sensor dusty	On			1 T	
Smoke sensor dirty	On			½ T	
Smoke sensor fault	On			On	
Lamp test (press “Reset” 10 s)	1 T	1 T	1 T	1 T	1 T

① Additional for ASD 535-3 and -4

② No fault triggered (triggers only after the delay time expires ➔ “Fault” LED display continuously lit).

③ The LED of the respective smoke level 1–10 (corresponds to 10–100% of alarm threshold) is continuously lit when exceeded. If a pre-signal is programmed on this level, the LED subsequently begins to flash (default: VS 1 = level 3, VS 2 = level 5, VS 3 = level 7).

T = Flashing indicator; ½ s cycle / 1 s cycle / 2 s cycle

Displays on the AMB 35 Main Board

On the AMB 35 there is a 3-digit segment display which can have the following outputs and displays:

- flashing, point and ***AL*** = Autolearning running;
- flashing, point and ***Fr*** = filter replacement is running;
- flashing point and point continuously lit = day/night control active;
- switch setting ***d*** > ***RE*** = filter service life;
- switch setting ***E*** = event memory ***E01*** to ***E99***;
- switch setting ***F*** = firmware version;
- press “UP” key = set configuration ***A11*** to ***X03***;
- switch setting ***V*** = airflow values (airflow rate);
- flashing ***000*** = invalid entry;
- flashing ***U - -*** = initial reset is running;
- flashing ***IA1***, ***IA2***, ***IF1***, ***IF2***, ***IP1***, ***IP2***, ***IE1***, ***IE2*** = test trigger is activated.

Programming

The ASD 535 has switch settings which are configured with permanently assigned parameters:

- normative system limits according to EN 54-20, Class A to C, settings ***A11*** to ***C32***;
- non-normative system limits, settings ***W01*** to ***W48***;
- Configurable positions for settings after using “ASD PipeFlow” and/or “ASD Config” or SecuriPro, SecuriFire or Integral FACP (SLM 35 / ML-SFD / XLM 35), ***X01*** to ***X03***.

The parameters are saved at the factory with values for compliance with EN 54-20. Changing the parameters may result in non-compliance with EN 54-20. Reprogramming on the ASD 535 using “ASD Config” may be carried out only by the manufacturer or by persons under the supervision of and trained by the manufacturer.

Switch settings on the AMB 35 Main Board

Pos.	Range / Display	Purpose
A	***A11*** / ***A12***	acc. to EN 54-20, Class A
b	***b11*** / ***b12*** / ***b21*** / ***b22***	acc. to EN 54-20, Class B
C	***C11*** / ***C12*** / ***C21*** / ***C22*** / ***C31*** / ***C32***	acc. to EN 54-20, Class C
d	Polling (***RE***) Setting (***SE***) ↳ ***on*** / ***T*** / ***R*** / ***oFF***	***on*** = On / ***oFF*** = Off ***T*** = filter service life ***R*** = filter replacement ***b*** = both ***ch1*** = channel I
E	***E01*** to ***E99*** ↳ ***G00*** to ***G99***	Event memory ***E01*** – ***E99*** ↳ Event group ***G00*** – ***G99***
F	***F00*** to ***F99*** (3 x)	Display of firmware version
I	***IA1*** / ***IA2*** ***IF1*** / ***IF2*** ***IP1*** / ***IP2*** ***IE1*** / ***IE2***	Trigger; Test alarm (***IA.***) Test fault (***IF.***) Test pre-signal (***IP.***) Test alarm 2 (***IE.***)
o	***o00***	Log off additional modules (optional modules)
T	***Y10*** to ***Y99*** / ***M01*** to ***M12*** ***d01*** to ***d31*** / ***H00*** to ***H23*** ***M00*** to ***M59***	Polling (***RE***) and setting (***SE***) the date and time
U	***U01***	Execute initial reset
V	***V01*** / ***V02***, each ***000*** to ***255***	Output airflow rate in % Pipe I (=***V01***), pipe II (=***V02***)
W	***W01*** to ***W48***	non-normative
X	***X01*** to ***X03***	configurable

The table lists only the available switch settings. Information about entry procedure is found in Technical description T 131 192 E, Sec. 8.3.

System limits without “ASD PipeFlow” calculation

The system limits apply to planning without the “ASD PipeFlow” calculation software. There are two areas with the following meaning:

- **Normative system limits** compliant to EN 54-20, Class A to C, switch settings ***A11*** to ***C32***;
- **Non-normative system limits**, switch settings ***W01*** to ***W48***.

Normative system limits

Switch settings ***A11*** to ***C32*** have configured values which are necessary for alarm response sensitivity and airflow monitoring compliance with EN 54-20 Class A to C. The switch setting designation is deciphered as follows:

- First digit Response class ***A***, ***b***, ***C*** compliant with EN 54-20;
- Second digit System limit ***1***, ***2***, ***3*** (pipe topology);
- Third digit Number of pipe networks ***1***, ***2*** on the ASD.

Example: ***b22*** Response class ***b*** / system limit ***2*** / ***2*** sampling pipe tube networks.

Non-normative system limits

Switch settings ***W01*** to ***W48*** contain system limits which fulfil **only** the alarm response sensitivity for EN 54-20 Class A to C **but not** the normative limits concerning airflow monitoring. Since these are identical to system limits ***A11*** to ***C32*** concerning pipe topology (pipe network length, number of sampling holes), switch settings ***W01*** to ***W48*** are also included in the tables below. Additional information about switch settings ***W01*** to ***W48*** concerning number of pipe networks and airflow monitoring can be found in Technical description T 131 192, Sec. 4.4.4.4.

Switch settings ***W01*** to ***W48*** may be used only after consulting with the manufacturer. The configured values they contain concerning airflow monitoring are **not** tested in accordance with EN. For further information about using the system limits table is found in Technical description T 131 192, Sec. 4.4.4.3 and 4.4.4.4.

System limits table for planning without “ASD PipeFlow” calculation

EN 54-20 compliance, Class A (highly sensitive)

Shape	System limit	Switch setting to EN 54-20		Switch setting Non-normative		Smoke sensor type SSD 535	Alarm threshold (%/m)t	Length from ASD to the last T-piece/cross	Max. length from ASD to the farthest sampling hole	Number of sampling holes per sampling branch	Max. total length of the sampling pipe per pipe network (smoke sensor)
		1 tube	2 tube	1 tube	2 tube						
I	1	A11	A12	W01 – W04	W05 – W08	–3	0.03	---	50 m	1 – 7	50 m
U / T	1	A11	A12	W01 – W04	W05 – W08	–3	0.03	1 – 20 m	40 m	1 – 4	80 m
H	1	A11	A12	W01 – W04	W05 – W08	–3	0.03	1 – 20 m	40 m	1 – 2	160 m
E	1	A11	A12	W01 – W04	W05 – W08	–3	0.03	1 – 20 m	40 m	1 – 3	120 m

EN 54-20 compliance, Class B (sensitive)

I	1	b11	b12	W09 – W12	W13 – W16	–3	0.09	---	50 m	1 – 7	50 m
	2	b21	b22	W17 – W20	W21 – W24	–3	0.06	---	70 m	5 – 9	70 m
U / T	1	b11	b12	W09 – W12	W13 – W16	–3	0.09	1 – 20 m	40 m	1 – 3	80 m
	2	b21	b22	W17 – W20	W21 – W24	–3	0.06	1 – 20 m	55 m	3 – 5	110 m
H	1	b11	b12	W09 – W12	W13 – W16	–3	0.09	1 – 20 m	35 m	1 – 2	140 m
	2	b21	b22	W17 – W20	W21 – W24	–3	0.06	1 – 20 m	45 m	2 – 3	180 m
E	1	b11	b12	W09 – W12	W13 – W16	–3	0.09	1 – 20 m	40 m	1 – 2	120 m
	2	b21	b22	W17 – W20	W21 – W24	–3	0.06	1 – 20 m	50 m	2 – 3	150 m

EN 54-20 compliance, Class C (standard)

I	1	C11	C12	W25 – W28	W29 – W32	–1	0.8	---	40 m	1 – 5	40 m
	2	C21	C22	W33 – W36	W37 – W40	–2	0.35	---	80 m	3 – 9	80 m
	3	C31	C32	W41 – W44	W45 – W48	–2	0.13	---	110 m	7 – 16	110 m
U / T	1	C11	C12	W25 – W28	W29 – W32	–1	0.8	1 – 20 m	30 m	1 – 3	60 m
	2	C21	C22	W33 – W36	W37 – W40	–2	0.35	1 – 20 m	60 m	3 – 5	120 m
	3	C31	C32	W41 – W44	W45 – W48	–2	0.13	1 – 20 m	70 m	5 – 9	140 m
H	1	C11	C12	W25 – W28	W29 – W32	–1	0.8	1 – 25 m	35 m	1 – 2	140 m
	2	C21	C22	W33 – W36	W37 – W40	–2	0.35	1 – 25 m	45 m	2 – 3	180 m
	3	C31	C32	W41 – W44	W45 – W48	–2	0.13	1 – 25 m	60 m	3 – 5	240 m
E	1	C11	C12	W25 – W28	W29 – W32	–1	0.8	1 – 20 m	30 m	1 – 2	90 m
	2	C21	C22	W33 – W36	W37 – W40	–2	0.35	1 – 20 m	50 m	2 – 3	150 m
	3	C31	C32	W41 – W44	W45 – W48	–2	0.13	1 – 20 m	60 m	3 – 6	180 m

Sampling holes for planning without "ASD PipeFlow"-calculation

The tables below show the respective hole diameters for the numbers in **Fig. 4** as a function of the number of sampling holes per sampling branch.

I-shaped sampling pipes																
Number of sampling holes per sampling branch	Hole diameter in mm for the sampling hole number from ASD															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	5.0															
2	4.0	5.0														
3	4.0	4.0	5.0													
4	3.5	3.5	4.0	5.0												
5	3.5	3.5	3.5	4.0	5.0											
6	2.5	2.5	2.5	2.5	3.0	5.0										
7	2.5	2.5	2.5	2.5	2.5	2.5	5.0									
8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0								
9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0							
10	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	3.0	7.0						
11	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	4.0	7.0					
12	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	4.0	7.0				
13	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	4.0	7.0			
14	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	4.0	7.0		
15	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	4.0	7.0	
16	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	4.0	7.0

U/T-shaped sampling pipes									
Number of sampling holes per sampling branch	Hole diameter in mm for the sampling hole number from ASD								
	1	2	3	4	5	6	7	8	9
1	5.0								
2	4.0	5.0							
3	4.0	4.0	5.0						
4	4.0	4.0	4.0	5.0					
5	4.0	4.0	4.5	5.0	6.5				
6	3.0	3.0	3.5	3.5	4.0	6.5			
7	2.5	3.0	3.0	3.5	3.5	4.0	6.5		
8	2.5	2.5	3.0	3.0	3.5	3.5	3.5	7.0	
9	2.5	2.5	3.0	3.0	3.5	3.5	3.5	3.5	7.0

H/E-shaped sampling pipes						
Number of sampling holes per sampling branch	Hole diameter in mm for the sampling hole number from ASD					
	1	2	3	4	5	6
1	5.0					
2	4.0	5.0				
3	4.0	4.0	5.5			
4	3.0	3.0	3.5	5.5		
5	2.5	3.0	3.0	3.0	6.0	
6 (E-shaped only)	2.5	2.5	3.0	3.0	3.5	6.0

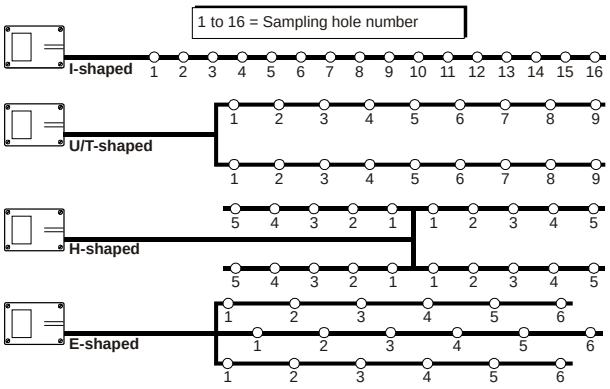


Fig. 4 Size of sampling holes

Configuration options, Table A:

The following criteria can be set for each smoke sensor / sampling pipe. Also, the criteria for day/night control can be separately set. Configuration changes are saved on ***X01*** to ***X03***.

Sector • Parameter	**Default Setting**	**Range**	**Resolution / Levels**	**Saving after change**
Alarm 2				
• Alarm 2 On / Off	Off	Off / On		***X01*** – ***X03***
• Sensitivity (always at least 20% over Alarm)	1 %/m	– 10 %/m	0.0002 %/m	***X01*** – ***X03***
• Alarm 2 delay	2 s	0 s – 60 s	1 s	***X01*** – ***X03***
• Alarm 2 latching	On	On / Off		***X01*** – ***X03***
• Holding time for area switching (Al 2 to Al)	20	10 – 250	1 s	***X01*** – ***X03***
Alarm				
• Alarm threshold (dependent on smoke sensor type and response class according to EN 54-20)	***C11*** / ***C12***	0.02 – 10%/m 0.1 – 10%/m 0.5 – 10%/m	0.0002 %/m	***X01*** – ***X03***
• Smoke level average value formation (number)	4	1 – 10	1	***X01*** – ***X03***
• Alarm delay (**UL/ULC max. 30 s**)	2 s	0 s – 60 s	1 s	***X01*** – ***X03***
• Alarm cascade	Off	Off / On		***X01*** – ***X03***
• Alarm latching	On	On / Off		***X01*** – ***X03***
Pre-signal				
• Pre-signal 1 On / Off	On	On / Off		***X01*** – ***X03***
• Pre-signal 2 On / Off	On	On / Off		***X01*** – ***X03***
• Pre-signal 3 On / Off	On	On / Off		***X01*** – ***X03***
• Pre-signal 1 (100% = alarm threshold)	30%	10 – 90%	10%	***X01*** – ***X03***
• Pre-signal 2 (100% = alarm threshold)	50%	VS 1 + 10 – 90%	10%	***X01*** – ***X03***
• Pre-signal 3 (100% = alarm threshold)	70%	VS 2 + 10 – 90%	10%	***X01*** – ***X03***
• Pre-signal delay (VS 1 – VS 3)	2 s	0 s – 60 s	1 s	***X01*** – ***X03***
• Pre-signal latching	Off	Off / On		***X01*** – ***X03***
Smoke sensor dust/dirt				
• Smoke sensor dust On / Off	On	On / Off		***X01*** – ***X03***
• Smoke sensor dirt On / Off	On	On / Off		***X01*** – ***X03***
• Dust threshold (% of Al)	50%	5 – 60%	5%	***X01*** – ***X03***
• Dirt threshold (% of Al)	75%	65 – 100%	5%	***X01*** – ***X03***
• Dust latching	On	On / Off		***X01*** – ***X03***
• Dirt latching	On	On / Off		***X01*** – ***X03***
• Fault delay of smoke sensor	30 s	0 s – 60 s	1 s	***X01*** – ***X03***
Airflow monitoring				
• LS-Ü blockage On / Off	On	On / Off		***X01*** – ***X03***
• LS-Ü pipe breakage On / Off	On	On / Off		***X01*** – ***X03***
• LS-Ü sensitivity (applies to ***A01*** to ***C32***) ①	±20% ①	±10 – ±70%	± 10%	***X01*** – ***X03***
• LS-Ü average value formation (number)	20	1 – 30	1	***X01*** – ***X03***
• LS-Ü delay time (applies to ***A01*** to ***C32***) ①	300 s ①	10 s – 3.600 s	1 s	***X01*** – ***X03***

① Increased values are configured for switch settings ***W01*** to ***W48***; these are **not** tested for EN compliance (see Technical description T 131 192 E, Sec. 4.4.4.4).

Configuration options, Table B:

The following criteria apply to the entire ASD 535. Saving a configuration after changes is performed in the context of the adaptations in Table A on one of the freely programmable switch settings ***X01*** to ***X03***.

Sector • Parameter	**Default Setting**	**Range**	**Resolution / Levels**	**Saving after change**
Autolearning				
• Autolearning On / Off	Off	On		***X01*** – ***X03***
• Autolearning duration	3 days	1 min to 14 days	min, h, days	***X01*** – ***X03***
• Autolearning factor (of measured Al threshold)	1.5	1.1 – 10 x		***X01*** – ***X03***
Day/night control / day of the week control				
• Day/night control On / Off	Off	Off / clock / FACP / input “OEM1 / St”		***X01*** – ***X03***
• Day start time (only with “Clock”)	06:00	00:00 – 24:00	1 min	***X01*** – ***X03***
• Night start time (only with “Clock”)	20:00	00:00 – 24:00	1 min	***X01*** – ***X03***
• Day of the week control (only with “Clock”)	On	Mo to Su	days	***X01*** – ***X03***

➔➔

Continuation table B:

General faults				
• Lithium battery / clock fault	On	On / Off		***X01*** – ***X03***
Ventilator				
• Fan speed	Level III	Level I to V	1	***X01*** – ***X03***
Deactivate / switch off sensor				
• Smoke sensor I / Smoke sensor II • Switch off (partial planning) only smoke sensor II	On	On / deactivated / switched off (partial planning)		***X01*** – ***X03***

Configuration options, Table C:

Independent configurations. These can be changed independently of the switch settings in the ASD 535.

Sector • Parameter	**Default Setting**	**Selection**
Time		
• Year, month, day, hour, minute	---	minutes – year
Relay / OC module / reset button / various		
• Relay 3 and OC module 3, AMB 35	Alarm II	According to ***"Configuration options relay allocation"***
• Relay 1, 1st RIM 35	Pre-signal 1 smoke sensor I	
• Relay 2, 1st RIM 35	Pre-signal 2 smoke sensor I	
• Relay 3, 1st RIM 35	Pre-signal 3 smoke sensor I	
• Relay 4, 1st RIM 35	Smoke sensor I dirty	
• Relay 5, 1st RIM 35	Sampling pipe I blockage	
• Relay 1, 2nd RIM 35	Pre-signal 1 smoke sensor II	
• Relay 2, 2nd RIM 35	Pre-signal 2 smoke sensor II	
• Relay 3, 2nd RIM 35	Pre-signal 3 smoke sensor II	
• Relay 4, 2nd RIM 35	Smoke sensor II dirty	
• Relay 5, 2nd RIM 35	Sampling pipe II blockage	
• Reset button On / Off	On	On / Off
• Heating control, subsequent heating time	2 min	1 – 60 min
• MCM settings, recording interval	1 s	1 – 120 s
• MCM smoke peak value memory	Off	Off / On
• Perform initial reset	---	On / Off
• Smoke sensor operation mode (smoke sensor I / II)	SSD/DMB	SSD/DMB or OEM inputs (single or in combination) Switched off
• Isolate smoke sensor (smoke sensor I / II)	Normal operation	Isolate / normal operation
• REK configuration	Off	Alarm 1 – Alarm 4 / faults
• Filter monitoring (smoke sensor I / II)	Off	Off / On
• Filter service life	6 months	1 – 24 months
• Read out operation time	---	months / days
• Filter replacement	---	start / finish

Relay allocation configuration options:

The following criteria can be programmed on a max. of 11 relays (1 AMB 35 unit on ASD 535-1 and -3, 5 units on 1st RIM 35, 5 units on 2nd RIM 35):

Smoke sensor I / LS-Ü I	**Smoke sensor II / LS-Ü II**	**General**
Smoke sensor I alarm	Smoke sensor II alarm	Fan fault
Pre-signal 1 smoke sensor I	Pre-signal 1 smoke sensor II	Operating voltage fault
Pre-signal 2 smoke sensor I	Pre-signal 2 smoke sensor II	Initial reset fault
Pre-signal 3 smoke sensor I	Pre-signal 3 smoke sensor II	Lithium battery / clock fault
Smoke sensor I dusty	Smoke sensor II dusty	
Smoke sensor I dirty	Smoke sensor II dirty	**only with ASD 535-1 and ASD 535-3**
Smoke sensor I fault	Smoke sensor II fault	REK event, alarm 1
Sampling pipe I pipe blockage	Sampling pipe II pipe blockage	REK event, alarm 1
Sampling pipe I pipe breakage	Sampling pipe II pipe breakage	REK event, alarm 1
Heating control sampling pipe I	Heating control sampling pipe II	REK event, alarm 1
Alarm 2 smoke sensor I	Alarm 2 smoke sensor II	REK event, faults

The criteria can also be allocated with the <u>or</u> function (example: smoke sensor dust or dirt <u>together</u> on one relay).

Commissioning

When commissioning the ASD 535, it is necessary to perform an initial reset for automatically adjusting the airflow monitoring on the connected sampling pipe(s).

If the ASD 535 is operated without "ASD PipeFlow" calculation, commissioning with the "**EasyConfig**" **method** can be carried out directly on the ASD 535.

For projects in which the "ASD PipeFlow" calculation software was used or in which customer-specific adaptations have to be made in the device configuration, the "**ASD Config**" configuration software has to be used.

Starting up

Before the ASD 535 is switched on, it is absolutely necessary that all of the required measures have been performed (see T 131 192, Sec. 7.1).

- sampling pipe correctly mounted and connected;
- smoke sensors installed and connected;
- isolation strip on the Lithium battery (AMB 35) removed.

Sequence and procedure for starting up:

1. Switch on supply voltage (FACP); while the fan accelerates stepwise to its final speed (takes about 100 s), the next procedure can be carried out. **The system is immediately armed for alarm**.
2. **"EasyConfig":** select necessary switch setting for operation according to ***"System limit table"*** (e.g. "***b22***") ➔ see ***"Re-programming"***.
   - or:
   "ASD Config": after adapting the configuration (alarm threshold according to "ASD PipeFlow" and other criteria in Tables A and B), select switch setting "***X01***", "***X02***" or "***X03***".
3. Set date and time via AMB 35 with "EasyConfig" or from "ASD Config" (adoption by PC).
4. Following a **minimum waiting time of 5 min** after switching on, an initial reset must be performed (possible only via AMB 35) ➔ see ***"Initial reset"***.
5. The ASD 535 is now ready for operation.

Re-programming

Example: Response class B, system limit 2, ASD 535-4 (2 sampling tubes), required switch setting ***b22***.

Measure	Display	Procedure, remarks
Switch settings ***W01*** to ***W48*** may be used only after consulting with the manufacturer. The configured values they contain concerning airflow monitoring are **not** tested in accordance with EN.		
6. Press the "UP" key	flashing ***C32***	• Display of the default setting
7. Press "UP" key twice until display shows ***b***	in succession ***A*** / ***b***	• Display switch setting group ***b***
8. Press the "OK" key	***b11***	• Display of the smallest possible setting in group ***b***
9. Press the "UP" key until display shows ***b22***	in succession ***b11*** / ***b12*** / ***b21*** / ***b22***	• Display of the possible settings in group ***b***
10. Press the "OK" key	flashing ***b - -*** (approx. 4 x)	• New setting is programmed
11. Check: Press the "UP" key	flashing ***b22***	• Display of the new setting

Initial reset

Measure	Display	Procedure, remarks
Before performing an initial reset after switching on the ASD 535, a **waiting time of at least 5 min** must be observed.		
1. Press the "UP" key	flashing ***C32*** or other	• Display of the default setting or the installation-specific switch setting
2. Press the "UP" key several times until display shows ***U***	in succession ***A*** to ***U***	• Display of the switch setting group ***U***
3. Press the "OK" key	***U01***	• Display initial reset On
4. Press the "OK" key again	flashing ***U - -*** (5 to max. 120 s)	• Initial reset in progress
5. Wait	flashing point (watchdog indicator)	• Initial reset completed

Filter replacement

When filter monitoring is activated and after expiry of the configured filter service life, a "Filter fault (service life exceeded)" fault is triggered. To remedy, the filter element in a dust filter unit must be replaced. When the expired filter service life (read out via *EasyConfig* switch position ***d*** > ***RE***) is periodically checked, the replacement can take place before the fault is triggered.

For an activated filter replacement the ASD is set to the "**isolate**" state. This insures that during the replacement work falling dust particles from the filter element do not cause a false alarm.

When the ASD 535 housing is closed, the "Start filter replacement" function can be activated by means of the **"Reset" key**. To do so, press the key **longer than** 15 s (attention: lamp test after 10 s). After 15 s the filter replacement is started and indicated by switching to the "Isolate" state (LED "Fault"). On an ASD 535-2 and -4 (2-channel device) the filter replacement is started simultaneously for both smoke sensors (provided the filter monitoring is activated). When the "Reset" key is deactivated (via "ASD Config"), the "Start filter replacement" function is not accessible.

After the filter has been replaced, the "Filter replacement" procedure is completed by pressing the **"Reset" key** on the ASD. This cancels the "Isolate" state and resets the fault on the ASD. "Filter service life" monitoring is restarted at 0.

The filter replacement can also be started via *EasyConfig* switch position ***d*** > ***SE***. For information please refer to Technical Description T 131 192, Section 7.8.

Measurements / commissioning protocol

Carry out the following measurements:

- Measure operating voltage on terminals 1 (+), 2 (-) (if redundant supply, then also terminals 3 & 4) ➔ target value = 12.3 to 13.8 VDC (in 12 VDC operation) or 21.6 to 27.6 VDC (in 24 VDC operation).
- Airflow values in switch settings ***V*** (see Technical description T 131 192, Sec. 7.6.1)

The commissioning protocol is like a personal history of the ASD 535 and should therefore be filled out conscientiously and completely and stored in the ASD 535. If required, a copy can be made and stored in the installation dossier.

Checking fault and alarm actuation

Test	Procedure	Action
		Block or switch off fire control installations and remote alarms on the superordinate FACP.
Check airflow monitoring	Tape sampling holes (adhesive tape; number depends on the pipe configuration).	• As soon as the change is exceeded by ±20% the "Fault" LED begins to flash. • When the LS-Ü delay expires (300 s), the ASD triggers a fault ➔ fault on FACP ① / ②.
Check alarm actuation	Subject maintenance sampling hole or sampling hole to smoke.	• ASD actuates an alarm ➔ alarm on FACP; correct alarm actuation checked (zone and range actuation) on the FACP ① / ②. • If there are pre-signals they are also actuated.

① Between each check the ASD 535 must be reset.
② For the ASD 535-2 and -4 checks have to be carried out for both sampling pipes.

Alternatively, this control can also be performed using *EasyConfig* switch position ***I***.

Article numbers and spare parts

Short designation		Article number
Aspirating smoke detector	ASD 535-1	11-2000015-01-XX
	ASD 535-2	11-2000016-01-XX
	ASD 535-3	11-2000017-01-XX
	ASD 535-4	11-2000018-01-XX
	ASD 535-3 HD	11-2000036-01-XX
	ASD 535-4 HD	11-2000037-01-XX
Al 0,5 – 10 %/m	SSD 535-1	11-2000008-01-XX
VS 0,05 – 9 %/m	SSD 535-1 CP	11-2000011-01-XX
Al 0,1 – 10 %/m	SSD 535-2	11-2000009-01-XX
VS 0,01 – 9 %/m	SSD 535-2 CP	11-2000012-01-XX
Al 0,02 – 10 %/m	SSD 535-3	11-2000010-01-XX
VS 0,002 – 9 %/m	SSD 535-3 CP	11-2000013-01-XX

➔➔

Continuation:

Short designation		Article number
eXtended Line Module XLM 35		11-2200003-01-XX
Module M-Line ML-SFD		11-2200015-01-XX
SecuriLine module SLM 35		4000286.0101
Relay Interface Module RIM 35		11-2200031-01-XX
Memory Card Module MCM 35		4000285.0101
SD memory card (industrial version)		11-4000007-01-XX
Serial Interface Module SIM 35		11-2200000-01-XX
Serial Master Module SMM 535		11-2200001-01-XX
USB cable, 4.5 m		4301248
Overvoltage Protection Board OPB 911 CP		11-2200038-01-XX
AMB 35-1 (for ASD 535-1 / -3)		11-2200016-01-XX
AMB 35-2 (for ASD 535-2 / -4)		11-2200017-01-XX
AMB 35-1 CP (painted, for ASD 535-3 HD)		11-2200021-01-XX
AMB 35-2 CP (painted, for ASD 535-4 HD)		11-2200022-01-XX
BCB 35 (without smoke level indicator)		4301220.0101
ACB 35 (with smoke level indicator)		4301221.0101
ACB 35 CP (painted, for ASD 535-x HD)		11-2200020-01-XX
Aspirating fan unit AFU 35, complete		4000299
Airflow sensor AFS 35		4000300
Insect Protection Screen IPS 35 (set of 2)		11-2300012-01-XX
Latch plate 2nd channel (set of 50)		11-2300009-01-XX
Lithium battery		11-4000002-01-XX
Cable screw union	M20 (set of 10)	11-4000003-01-XX
	M25 (set of 10)	11-4000004-01-XX
Adapter US cable screw union AD US M-Inch		11-2300029-01-XX
Universal Module Support UMS 35		4301252.0101
Technical description ASD 535		T 131 192
Application guidelines for deep-freeze warehouses		T 131 390
Material for the sampling pipe		T 131 194
Commissioning protocol		T 131 199
Data sheets	XLM 35	T 140 088
	ML-SFD	T 140 822
	SLM 35	T 131 197
	RIM 35	T 131 196
	MCM 35	T 131 195
AFU 35 installation instructions		T 131 200
Integration description on SecuriPro		T 131 218

Declaration of performance
www.securiton.ch/declaration-of-performance

Dimensional drawing

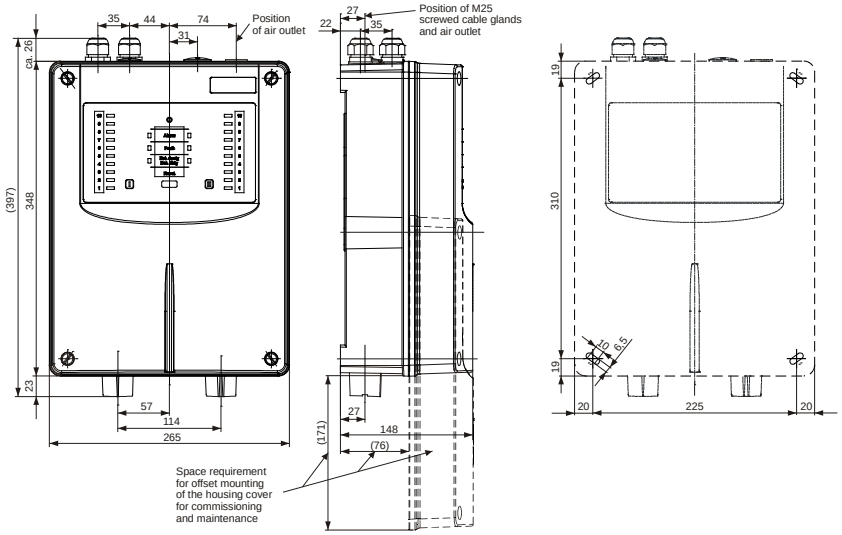


Fig. 5 Detector housing dimensional drawing

Technical data

Type				ASD 535	
Supply voltage range				10.5 to 30 (**UL/FM = 12.4 to 27**)	VDC
Max. current consumption, measured in		12 VDC operation	24 VDC operation	Typical	
Fan speed level V and at ➔		10.5 VDC ①	18 VDC ①	24 VDC	
ASD 535-1	Idle/fault	approx. 575	approx. 340	approx. 260	mA
	Alarm I	approx. 660	approx. 390	approx. 295	mA
ASD 535-2	Idle/fault	approx. 645	approx. 380	approx. 290	mA
	Alarm I + II	approx. 745	approx. 450	approx. 350	mA
ASD 535-3 / -3 HD	Idle/fault	approx. 575	approx. 340	approx. 260	mA
	Alarm I	approx. 695	approx. 405	approx. 310	mA
ASD 535-4 / -4 HD	Idle/fault	approx. 645	approx. 380	approx. 290	mA
	Alarm I + II	approx. 820	approx. 490	approx. 385	mA
additionally with 1 RIM 35 unit (all relays triggered)		approx. 15	approx. 10	approx. 7	mA
additionally with 2 RIM 35 units (all relays triggered)		approx. 30	approx. 20	approx. 14	mA
additionally with XLM 35 / ML-SFD / SLM 35		approx. 20	approx. 10	approx. 5	mA
additionally with MCM 35		approx. 25	approx. 15	approx. 10	mA
additionally with SIM 35		approx. 20	approx. 10	approx. 5	mA
SMM 535 (not from ASD but rather from PC via USB connection)				max. 100	mA
Switch-on current peak ② (caused by EMC protection elements on the ASD supply input)				approx. 5 A for max. 1 ms	
Sampling pipe length				see T 131 192, Sec. 4.2.1	
Sampling pipe Ø, typical (inner/outer)				Ø 20 / 25	mm
Max. number of sampling holes				see T 131 192, Sec. 4.2.1	
Sampling hole diameter			Ø 2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5 / 5.5 / 6 / 6.5 / 7		mm
Response range (smoke sensor sensitivity see section “Article numbers and spare parts”)			EN 54-20, Class A, B, C		
Protection type acc. to IEC 60529 / EN 60529			54 (for **ASD 535-x HD = 66** ③)		IP
Ambient conditions acc. to IEC 60721-3-3 / EN 60721-3-3			3K5 / 3Z1		class
Extended ambient conditions:					
• Detector housing temperature range			–30 – +60 (**UL max. +40**)		°C
• Temperature range of detector housing to Australian Standard AS 1603.8			–30 – +55		°C
• Sampling pipe temperature range			–30 – +60 ④		°C
• Temperature range of sampling pipe to Australian Standard AS 1603.8			–30 – +55		°C
• Max. approved temperature fluctuation in detector housing and sampling pipe operation			20 ④		°C
• Max. permitted storage temperature of detector housing (without condensation)			–30 – +70		°C
• Ambient pressure difference of detector housing to sampling pipe (sampling holes)			must be identical		
• Detector housing humidity ambient condition (transient without condensation)			95 ④		% rel. hum.
• Detector housing and sampling pipe humidity ambient condition (continuous)			70 ④		% rel. hum.
Max. loading capacity relay contact			50 VDC (**UL max. 30**) / 1 A / 30 W		
Max. loading capacity per open collector module (dielectric strength 30 VDC)			100		mA
Plug-in terminals			2.5		mm²
Cable entry for cable Ø			Ø 5 – 12 (M20) / Ø 9 – 18 (M25)		mm
Sound pressure level for fan speed level I / II / III / IV / V			34 / 36 / 39 / 40 / 41		dB (A) / 1 m
Housing	material		ABS blend, UL 94-V0		
	colour		grey 280 70 05 / anthracite violet 300 20 05		RAL
Approvals		EN 54-20 / EN 54-27 / FM 3230-3250 / UL 268 7th Ed / UL 268A 4th Ed / ULC-S529 4th Ed			
VdS approval			G 208154		
Dimensions	ASD 535-x (W x H x D)			265 x 397 x 148	mm
Weight	ASD 535-x (incl. SSD 535-x)			3,555	g

① Current consumption at maximum permitted voltage drop in the electrical installation (guideline value for calculating the conductor cross-section).

② May cause an immediate actuation of the protection circuit in power supplies with overload protection circuits (primarily in devices with no emergency power supply and output current of < 1.5 A).

③ For protection type IP 66 an air re-circulation conduit is imperative.

④ Lower or higher temperature ranges are possible after consulting with the manufacturer. The manufacturer must be consulted if deployment is to be in the condensation range.

Changes to Index “k” on pages: 1, 2, 3, 7, 7, 8, 9, 10

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ASD 533

Aspirating Smoke Detector

As of production version 311023 and FW version 01.11.xx

The ASD 533 aspirating smoke detector performs the task of taking continuous air samples via one or two sampling pipe networks from a monitored area and feeding the samples to one or two smoke sensors.

The ASD 533 consists of the detector housing and one or two sampling pipe tube networks. The sampling pipes have several sampling holes whose size is such that each hole withdraws the same amount of air. The sampling pipes may be I-, U-, T-, H-, or E-shaped. The sampling pipes are usually symmetrically designed. Asymmetrical sampling pipe tube networks can also be implemented using the “ASD PipeFlow” calculation software.

Fig. 1 ASD 533

Description

Integrated in the detector housing is a high-performance fan which, in conjunction with the sampling pipe, ensures an uninterrupted air supply to the detector housing. Airflow monitoring detects any pipe blockages and pipe breakages in each of the sampling pipe networks.

The ASD 533 aspirating smoke detector is available in the following versions:

- ASD 533-1 for 1 sampling tube, for 1 smoke sensor
- ASD 533-2 for 2 sampling tubes, for 2 smoke sensors

The ASD 533 uses the **SSD 533** smoke sensor, which has an alarm sensitivity of 0.02%/m to 10%/m.

The ASD 533 aspirating smoke detector has four slots for additional modules. The following modules can be fitted:

- XLM 35 SecuriLine eXtended module
- ML-SFD Module M-Line
- SLM 35 SecuriLine module
- RIM 35 Relay interface module with 5 relays (max. 2 units)
- MCM 35 Memory card module
- SIM 35 serial interface module
- UIM 35 universal interface module

The ASD 533 can be connected to a higher level FACP via potential-free change-over contacts.

Fitting an **XLM 35**, **ML-SFD** or **SLM 35** means that the ASD 533 can be ideally connected to the SecuriFire and Integral fire alarm systems via the addressable loop (with SLM also to the SecuriPro).

The **RIM 35** is available as a further installation option. This module enables the availability of all three pre-signal levels as well as the states “smoke sensor dirty” and “LS-Ü blockage” as relay contacts. The relays are also freely programmable via the „ASD Config” configuration software.

The **MCM 35** is used for storing operating data.

Up to 250 ASDs can be networked with the **SIM 35**; they can then be visualised and operated using “ASD Config”.

The ASD 533 aspirating smoke detector can be used for:

- **Equipment monitoring**: EDP systems, electrical distributors, switch cabinets, etc.
- **Space surveillance**: EDP rooms, ultra-clean rooms, warehouses, hollow floors, protection of cultural assets, transformer stations, prison cells, etc.

The ASD 533 is also deployed in areas where conventional point detectors are normally used. Local regulations and provisions must be observed from case to case.

The response behaviour of the ASD 533 has been tested in compliance with EN 54-20, Class A, B and C.

When setting up ASD 533 fire alarm systems, it is important to take note of and observe the information and specifications in the “**Technical description ASD 533**”. This includes among others:

- **General** Section 1
- **Safety informations** Section 1.2.2
- **Planning** Section 4
- **Mounting** Section 5
- **Installation** Section 6
- **Commissioning** Section 7

Opening the detector housing

To actuate the **rotary snap locks** use a Phillips screwdriver (at least No. 5) to **press down** **firmly** towards the housing base and then **turn** 90°. The position of the lock slit shows the current status:

- angled approx. 45° toward detector housing corner = closed
- angled approx. 45° toward detector housing edge = open

In either position the rotary snap locks **must** snap into place.

The **housing cover** (control unit) is connected to the main board by a **ribbon cable**. Make sure the ribbon cable is not damage when the housing cover is lifted off.

Connection

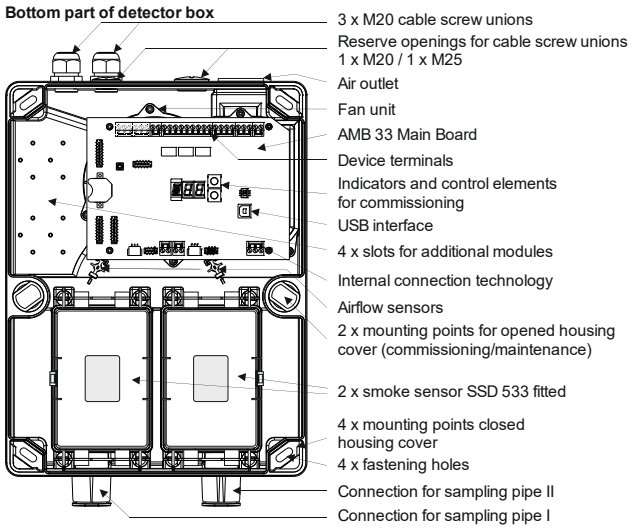
Bottom part of detector box
3 x M20 cable screw unions
Reserve openings for cable screw unions 1 x M20 / 1 x M25
Air outlet
Fan unit
AMB 33 Main Board
Device terminals
Indicators and control elements for commissioning
USB interface
4 x slots for additional modules
Internal connection technology
Airflow sensors
2 x mounting points for opened housing cover (commissioning/maintenance)
2 x smoke sensor SSD 533 fitted
4 x mounting points closed housing cover
4 x fastening holes
Connection for sampling pipe II
Connection for sampling pipe I

Fig. 2 View inside the ASD 533

Device connections on the AMB 33

The electrical connection is by means of plug-in terminals.

Term.	Signal	
1	+10.5 to +30 VDC ①	Main power supply line
2	0 V	
3	+10.5 to +30 VDC ①	Redundant power supply line
4	0 V	
5	+ supply (for OC consumers)	
6	Fault output, OC (all events)	
7	Alarm output, OC	
8	Freely programmable, OC	
9	Unused	
10	Rel. 1 “(NO)”	Fault ②
11	Rel. 1 “(NC)”	
12	Rel. 1 “COM”	
13	Rel. 2 “NO”	Alarm I
14	Rel. 2 “NC”	
15	Rel. 2 “COM”	
16	Rel. 3 “NO”	Alarm II or freely programmable
17	Rel. 3 “NC”	
18	Rel. 3 “COM”	
19	Reset external + input	Opto-isolator input
20	Reset external - input	
21 - 26	unused (not fitted on ASD 533-2)	

① UL/FM: +12.4 to +27 VDC
② The “Fault” relay has picked up in the normal state ➔ contact Te. 12/10 closed, 12/11 open (ASD 533 under voltage; no fault present).

AMB 33 internal connections

Terminal	Signal
MOT / M-	Fan - (black wire)
MOT / T	Fan tacho signal (white wire)
MOT / M+	Fan + (red wire)
OEM1 / AI-	Opto-isolator inputs OEM1
OEM1 / AI+	The “**OEM1** / **St**” input can also be used for activating the day/night control (priority over triggering from third-party detector).
OEM1 / St-	
OEM1 / St+	

- In some cases actuations may **not** comply with the requirements of **EN 54-20** (use only consulting with the manufacturer).
- The OEM inputs are **not** line-monitored.

Terminal assignment of the additional modules

The terminal assignments of the additional modules are shown in the corresponding data sheets (see “Article numbers and spare parts”).

Wiring principle

Examples of and information on the wiring principle can be found in the Technical description ASD 533, T 140 287, Sec. 6.

Using smoke sensors

The ASD 533 ships with the smoke sensors already fitted. The smoke sensors have to be removed from the detector housing for the installation of the ASD (release the two lock clamps per smoke sensor); however it should be left inside their protective packaging until the definitive commissioning. The definitive installation is carried out as described below, see **Fig. 3**.

- Always leave the smoke sensor inside its protective packaging until it is ready to be installed definitively in the detector housing.
- Depending on the circumstances (e.g. long period of time between mounting and commissioning or if the environment is extremely dusty (construction work)), only remove the smoke sensor from its protective packaging and insert it definitively in the detector housing when commissioning the ASD 533.
- Before installing the smoke sensor check that the insect protection screens are properly fitted to the smoke sensor chamber at the air inlet and outlet.
- The smoke sensor chamber must be absolutely free of any dirt and/or dust. Remove any residue resulting from mounting the detector housing.

The installation position of the smoke sensors depends on the particular smoke sensor chamber (I or II). The connectors of the smoke sensors are oriented toward the outside of the ASD housing. Incorrect installation positioning is prevented by the anti-twist rib on the smoke sensor housing.

The smoke sensors are secured inside the ASD housing using the two lock clamps. Connect the ribbon cable supplied with the smoke sensor to the smoke sensor (large ribbon cable connector) and to the AMB 33 main board (small ribbon cable connector).

The smoke sensor chamber II on the ASD 533-1 (only one smoke sensor) remain open (insect protection screens and lock clamps are not fitted, air channels are closed).

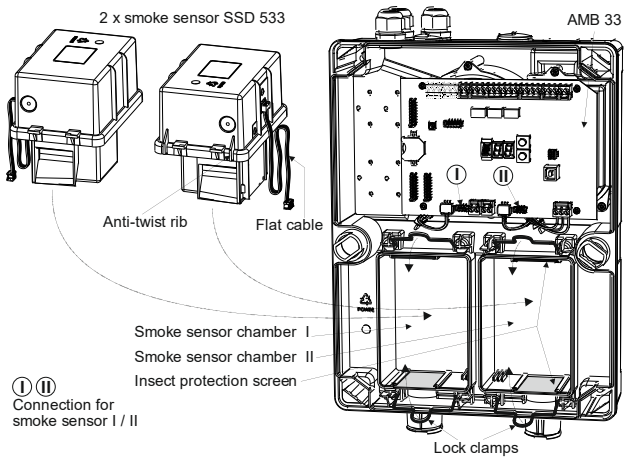

Fig. 3 Using the smoke sensors

Displays on the control unit

Several LEDs on the control unit indicate the current state of the ASD 533. The table below lists only the states for the ASD 533-1 (one smoke sensor / one sampling pipe). For the ASD 533-2 the indicators are doubled (**I** and **II**), except the operation indicator.

Function / state	Operation	Alarm	Fault	Det. dusty / dirty
	green	red	yellow	yellow
System Off (no voltage)				
System inactive (reset external)	On		½ T	
Smoke sensor Off (from FACP)	On		½ T	
Idle state	On			
Pipe blockage/pipe breakage, delay running ①	On		1 T	
Pipe blockage/pipe breakage, fault triggered	On		On	
Fan tacho signal missing	On		On	
Fault triggered	On		On	
Pre-signal 1	On	2 T		
Pre-signal 2	On	1 T		
Pre-signal 3	On	½ T		
Alarm	On	On		
Smoke sensor filter fault	On			2 T
Smoke sensor dusty	On			1 T
Smoke sensor dirty	On			½ T
Smoke sensor fault	On			On
Lamp test (press “Reset” 10 s)	1 T	1 T	1 T	1 T

① No fault triggered (triggers only after delay time has expired ➔ “Fault” continuously lit).
T = flashing display; ½ s cycle / 1 s cycle / 2 s cycle

Displays on the Main Board AMB 33

The AMB 33 has a 3-digit segment display enabling the following outputs and displays:

- flashing, point and ***AL*** = auto-learning running
- flashing, point and ***Fr*** = filter replacement is running
- flashing point and continuously lit point = day/night control active
- switch position ***E*** = event memory ***E01*** to ***E99***
- switch position ***F*** = firmware version
- press “UP” key = set configuration ***A11*** to ***X03***
- switch position ***V*** = airflow values (airflow rate)
- flashing ***000*** = invalid entry
- flashing ***U - -*** = initial reset is running
- flashing ***IA1***, ***IA2***, ***IF1***, ***IF2***, ***IP1***, ***IP2***, ***IE1***, ***IE2*** = test trigger is activated

Programming

The ASD 533 has switch positions, which are configured with permanently assigned parameters:

- Normative system limits according to EN 54-20, Class A to C, positions ***A11*** to ***C32***.
- Non-normative system limits, positions ***W01*** to ***W48***.
- Configurable positions for settings after using “ASD PipeFlow” and/or “ASD Config” or SecuriPro, SecuriFire or Integral FACP (SLM 35 / XLM 35 / ML-SFD), ***X01*** to ***X03***.

The parameters are saved at the factory with values for compliance with EN 54-20. Changing the parameters may result in non-compliance with EN 54-20. Re-programming on the ASD 533 using “ASD Config” may be carried out only by the manufacturer or by persons under the supervision of and trained by the manufacturer.

Switch positions on the Main Board AMB 33

Pos.	Range / Display	Purpose
A	***A11*** / ***A12***	acc. to EN 54-20, Class A
b	***b11*** / ***b12*** / ***b21*** / ***b22***	acc. to EN 54-20, Class B
C	***C11*** / ***C12*** / ***C21*** / ***C22*** / ***C31*** / ***C32***	acc. to EN 54-20, Class C
d	Polling (***RE***) Setting (***SE***) ↳ ***on*** / ***T*** / ***R*** / ***oFF***	***on*** = On / ***oFF*** = Off ***T*** = filter service life ***R*** = filter replacement ***ch1*** = channel I
E	***E01*** to ***E99*** ↳ ***G00*** to ***G99***	Event memory ***E01*** – ***E99*** ↳ Event group ***G00*** – ***G99***
F	***F00*** to ***F99*** (3 x)	Displays firmware version
I	***IA1*** / ***IA2*** ***IF1*** / ***IF2*** ***IP1*** / ***IP2*** ***IE1*** / ***IE2***	Trigger; Test alarm (***IA1***) Test fault (***IF1***) Test pre-signal (***IP1***) Test alarm 2 (***IE1***)
o	***o00***	Logs off additional modules (optional modules)
T	***Y10*** to ***Y99*** / ***M01*** to ***M12*** ***d01*** to ***d31*** / ***H00*** to ***H23*** ***M00*** to ***M59***	Polling (***RE***) and setting (***SE***) the date and time
U	***U01***	Executes initial reset
V	***V01*** / ***V02***, each ***000*** to ***255***	Volume flow output in % pipe I (=***V01***), pipe II (=***V02***)
W	***W01*** to ***W48***	non-normative
X	***X01*** to ***X03***	configurable

The table only lists the available switch positions. For information on the input procedure please refer to the Technical description, T 140 287, Sec. 8.3.

System limits without “ASD PipeFlow” calculation

The system limits apply to the planning without using the “ASD PipeFlow” calculation software. There are two areas, with the following meaning:

- **Normative system limits** compliant to EN 54-20, Class A to C, Switch positions ***A11*** to ***C32***;
- **Non-normative system limits**, Switch positions ***W01*** to ***W48***.

Normative system limits

Stored under switch positions ***A11*** to ***C32*** are values which are necessary in terms of alarm response sensitivity and airflow monitoring for compliance with EN 54-20 Class A to C. The switch position designation is deciphered as follows:

- First digit Response class ***A***, ***b***, ***C*** compliant to EN 54-20;
- Second digit System limit ***1***, ***2***, ***3*** (pipe topology);
- Third digit Number of tube networks ***1***, ***2***.

Example: ***b21*** Response class ***b*** / system limit ***2*** / ***1*** sampling pipe tube network.

Non-normative system limits

Switch positions ***W01*** to ***W48*** contain system limits which fulfil **only** the alarm response sensitivity compliant with EN 54-20 Class A to C, **but not** the normative limits with regard to airflow monitoring. As they are identical with the system limits ***A11*** to ***C32*** in terms of tube topology (tube network length, number of sampling holes), the switch positions ***W01*** to ***W48*** are also included in the tables below. For more details of switch positions ***W01*** to ***W48*** with regard to airflow monitoring, please refer to the Technical description, T 140 287, Sec. 4.4.4.4.

Switch positions ***W01*** to ***W48*** are to be used only after prior consultation with the manufacturer. The airflow monitoring values stored under those switch positions are **not** tested in accordance with EN. For more information on using the table of system limits, please refer to the Technical description T 140 287, Sec. 4.4.4.3 and 4.4.4.4.

Table of system limits for planning without “ASD PipeFlow” calculation

EN 54-20 compliance, Class A (highly sensitive)

Shape	System limit	Switch setting to EN 54-20		Switch setting Non-normative		Alarm threshold (%/m)	Length from ASD to the last T-piece/cross	Max. length from ASD to the farthest sampling hole	Number of sampling holes per sampling branch	Max. total length of the sampling pipe per pipe network (smoke sensor)
		1 tube	2 tubes	1 tube	2 tubes					
I	1	A11	A12	W01 – W04	W05 – W08	0.03	---	50 m	1 – 7	50 m
U / T	1	A11	A12	W01 – W04	W05 – W08	0.03	1 – 20 m	40 m	1 – 4	80 m
H	1	A11	A12	W01 – W04	W05 – W08	0.03	1 – 20 m	40 m	1 – 2	160 m
E	1	A11	A12	W01 – W04	W05 – W08	0.03	1 – 20 m	40 m	1 – 3	120 m

EN 54-20 compliance, Class B (sensitive)

I	1	b11	b12	W09 – W12	W13 – W16	0.09	---	50 m	1 – 7	50 m
	2	b21	b22	W17 – W20	W21 – W24	0.06	---	70 m	5 – 9	70 m
U / T	1	b11	b12	W09 – W12	W13 – W16	0.09	1 – 20 m	40 m	1 – 3	80 m
	2	b21	b22	W17 – W20	W21 – W24	0.06	1 – 20 m	55 m	3 – 5	110 m
H	1	b11	b12	W09 – W12	W13 – W16	0.09	1 – 20 m	35 m	1 – 2	140 m
	2	b21	b22	W17 – W20	W21 – W24	0.06	1 – 20 m	45 m	2 – 3	180 m
E	1	b11	b12	W09 – W12	W13 – W16	0.09	1 – 20 m	40 m	1 – 2	120 m
	2	b21	b22	W17 – W20	W21 – W24	0.06	1 – 20 m	50 m	2 – 3	150 m

EN 54-20 compliance, Class C (standard)

I	1	C11	C12	W25 – W28	W29 – W32	0.8	---	40 m	1 – 5	40 m
	2	C21	C22	W33 – W36	W37 – W40	0.35	---	80 m	3 – 9	80 m
	3	C31	C32	W41 – W44	W45 – W48	0.13	---	110 m	7 – 16	110 m
U / T	1	C11	C12	W25 – W28	W29 – W32	0.8	1 – 20 m	30 m	1 – 3	60 m
	2	C21	C22	W33 – W36	W37 – W40	0.35	1 – 20 m	60 m	3 – 5	120 m
	3	C31	C32	W41 – W44	W45 – W48	0.13	1 – 20 m	70 m	5 – 9	140 m
H	1	C11	C12	W25 – W28	W29 – W32	0.8	1 – 25 m	35 m	1 – 2	140 m
	2	C21	C22	W33 – W36	W37 – W40	0.35	1 – 25 m	45 m	2 – 3	180 m
	3	C31	C32	W41 – W44	W45 – W48	0.13	1 – 25 m	60 m	3 – 5	240 m
E	1	C11	C12	W25 – W28	W29 – W32	0.8	1 – 20 m	30 m	1 – 2	90 m
	2	C21	C22	W33 – W36	W37 – W40	0.35	1 – 20 m	50 m	2 – 3	150 m
	3	C31	C32	W41 – W44	W45 – W48	0.13	1 – 20 m	60 m	3 – 6	180 m

Sampling holes for planning with “ASD PipeFlow” calculation

The tables below show the corresponding hole diameters for the numbers in **Fig. 4** depending on the number of sampling holes per sampling branch.

I-shaped sampling pipe												
Number of sampling holes in the sampling branch	Hole diameter in mm for the sampling hole number as of ASD											
	1	2	3	4	5	6	7	8	9	10	11	12
1	5.0											
2	4.0	5.0										
3	4.0	4.0	5.0									
4	3.5	3.5	4.0	5.0								
5	3.5	3.5	3.5	4.0	5.0							
6	2.5	2.5	2.5	2.5	3.0	5.0						
7	2.5	2.5	2.5	2.5	2.5	2.5	5.0					
8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0				
9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0			
10	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	3.0	7.0		
11	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	4.0	7.0	
12	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	4.0	7.0

U/T-shaped sampling pipes								
Number of sampling holes per sampling branch	Hole diameter in mm for the sampling hole number as of ASD							
	1	2	3	4	5	6	7	8
1	5.0							
2	4.0	5.0						
3	4.0	4.0	5.0					
4	4.0	4.0	4.0	5.0				
5	4.0	4.0	4.5	5.0	6.5			
6	3.0	3.0	3.5	3.5	4.0	6.5		
7	2.5	3.0	3.0	3.5	3.5	4.0	6.5	
8	2.5	2.5	3.0	3.0	3.5	3.5	3.5	7.0

H/E-shaped sampling pipes					
Number of sampling holes per sampling branch	Hole diameter in mm for the sampling hole number as of ASD				
	1	2	3	4	5
1	5.0				
2	4.0	5.0			
3	4.0	4.0	5.5		
4	3.0	3.0	3.5	5.5	
5 (E-shaped only)	2.5	3.0	3.0	3.0	6.0

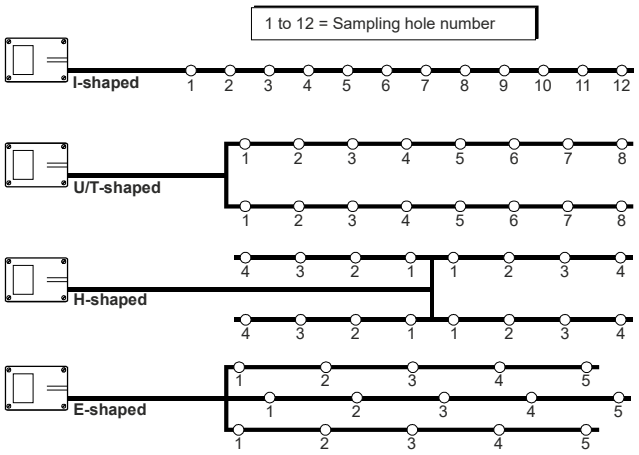

Fig. 4 Size of sampling holes

Configuration options, Table A:

The following criteria can be set for each smoke sensor/sampling pipe. Also, the criteria for day/night control can be separately set. Configuration changes are saved on one of the freely configurable switch positions ***X01*** to ***X03***.

Sector • Parameter	**Default Setting**	**Area**	**Resolution / Levels**	**Saving after change**
Alarm 2				
• Alarm 2 On / Off	Off	Off / On		***X01*** – ***X03***
• Sensitivity (always at least 20% above alarm)	1%/m	– 10%/m	0.0002%/m	***X01*** – ***X03***
• Alarm 2 delay	2 s	0 s – 60 s	1 s	***X01*** – ***X03***
• Alarm 2 latching	On	On / Off		***X01*** – ***X03***
• Hold time for area switchover (Al 2 to Al)	20	10 – 250	1 s	***X01*** – ***X03***
Alarm (EN 54-20)				
• Alarm threshold	***C11*** / ***C12***	0.02 – 10%/m	0.0002%/m	***X01*** – ***X03***
• Smoke level value averaging (number)	4	1 – 10	1	***X01*** – ***X03***
• Alarm delay (**UL/ULC max. 30 s**)	2 s	0 s – 60 s	1 s	***X01*** – ***X03***
• Alarm cascading	Off	Off / On		***X01*** – ***X03***
• Alarm latching	On	On / Off		***X01*** – ***X03***
Pre-signal				
• Pre-signal 1 On / Off	On	On / Off		***X01*** – ***X03***
• Pre-signal 2 On / Off	On	On / Off		***X01*** – ***X03***
• Pre-signal 3 On / Off	On	On / Off		***X01*** – ***X03***
• Pre-signal 1 (100% = alarm threshold)	30%	10 – 90%	10%	***X01*** – ***X03***
• Pre-signal 2 (100% = alarm threshold)	50%	VS 1 + 10 – 90%	10%	***X01*** – ***X03***
• Pre-signal 3 (100% = alarm threshold)	70%	VS 2 + 10 – 90%	10%	***X01*** – ***X03***
• Pre-signal delay (VS 1 – VS 3)	2 s	0 s – 60 s	1 s	***X01*** – ***X03***
• Pre-signal latching	Off	Off / On		***X01*** – ***X03***
Smoke sensor dust/soiling				
• Smoke sensor dust On / Off	On	On / Off		***X01*** – ***X03***
• Smoke sensor soiling On / Off	On	On / Off		***X01*** – ***X03***
• Dust threshold (% of Al)	50%	5 – 60%	5%	***X01*** – ***X03***
• Soiling threshold (% of Al)	75%	65 – 100%	5%	***X01*** – ***X03***
• Dust latching	On	On / Off		***X01*** – ***X03***
• Soiling latching	On	On / Off		***X01*** – ***X03***
• Smoke sensor fault delay	30 s	0 s – 60 s	1 s	***X01*** – ***X03***
Airflow monitoring				
• LS-Ü pipe blockage On / Off	On	On / Off		***X01*** – ***X03***
• LS-Ü pipe breakage On / Off	On	On / Off		***X01*** – ***X03***
• LS-Ü sensitivity (applies to ***A01*** to ***C32***) ①	±20% ①	±1 – ±70%	± 1%	***X01*** – ***X03***
• LS-Ü value averaging (number)	20	1 – 30	1	***X01*** – ***X03***
• LS-Ü delay (applies to ***A01*** to ***C32***) ①	300 s ①	10 s – 3600 s	1 s	***X01*** – ***X03***

① Stored under switch positions ***W01*** to ***W48*** are increased values which are **not** tested for EN compliance (see Technical description, T 140 287, Sec. 4.4.4.4).

Configuration options, Table B:

The following criteria apply to the entire ASD 533. Configuration changes are stored in connection with the adjustments from Table A, likewise on one of the user configurable switch positions ***X01*** to ***X03***.

Sector • Parameter	**Default Setting**	**Area**	**Resolution / Levels**	**Saving after change**
Autolearning				
• Autolearning On / Off	Off	On		***X01*** – ***X03***
• Autolearning duration	3 days	1 min to 14 days	min, h, days	***X01*** – ***X03***
• Autolearning factor (of measured Al threshold)	1.5	1.1 – 10 x		***X01*** – ***X03***
Day/night control / weekday control				
• Day/night control On / Off	Off	Off / clock / FACP / input "OEM1 / St"		***X01*** – ***X03***
• Day start time (only with "Clock")	06:00	00:00 – 24:00	1 min	***X01*** – ***X03***
• Night start time (only with "Clock")	20:00	00:00 – 24:00	1 min	***X01*** – ***X03***
• Weekday control (only with "Clock")	On	Mon to Sun	days	***X01*** – ***X03***

➔➔

Continuation of table B:

General faults				
• Lithium battery / clock fault	On	On / Off		***X01 – X03***
Ventilator				
• Fan speed ASD 533-1 • Fan speed ASD 533-2	Level I Level II	Level I Level II and I		***X01 – X03***
Deactivate / switch off sensor				
• Smoke sensor I / Smoke sensor II • Switch off (partial planning) only smoke sensor II	On	On / deactivated / switched off (partial planning)		***X01 – X03***

Configuration options, Table C:
Independent configurations. These configurations can be changed independently of the switch position on the ASD 533.

Sector • Parameter	**Default Setting**	**Selection**
Time		
• Year, month, day, hour, minute	---	minutes – year
Relay / OC output / reset key / various		
• Relay 3 and OC output 3, AMB 33	Alarm II	in accordance with "***Configuration options relay allocation***"
• Relay 1, 1st RIM 35	Pre-signal 1 smoke sensor I	
• Relay 2, 1st RIM 35	Pre-signal 2 smoke sensor I	
• Relay 3, 1st RIM 35	Pre-signal 3 smoke sensor I	
• Relay 4, 1st RIM 35	Smoke sensor I dirty	
• Relay 5, 1st RIM 35	Sampling pipe I blockage	
• Relay 1, 2nd RIM 35	Pre-signal 1 smoke sensor II	
• Relay 2, 2nd RIM 35	Pre-signal 2 smoke sensor II	
• Relay 3, 2nd RIM 35	Pre-signal 3 smoke sensor II	
• Relay 4, 2nd RIM 35	Smoke sensor II dirty	
• Relay 5, 2nd RIM 35	Sampling pipe II blockage	
• Reset key On / Off ①	On ①	On / Off
• Heating control, subsequent heating time	2 min	1 – 60 min
• MCM setting, recording interval	1 s	1 – 120 s
• MCM smoke peak value memory	Off	Off / On
• Carry out new initial reset	---	On / Off
• Smoke sensor mode of operation (smoke sensor I / II)	SSD/DMB	SSD/DMB or OEM inputs I (individual or in combination) Switched off
• Isolate smoke sensor (smoke sensor I / II)	Normal operation	Isolate / normal operation
• Filter monitoring (smoke sensor I / II)	Off	Off / On
• Filter service life	6 months	1 – 24 months
• Read out operation time	---	months / days
• Filter replacement	---	start / finish

① In the Chinese market, the reset key on the device must be deactivated using the "ASD Config" configuration software.

Relay allocation configuration options:
The following criteria can be programmed on a maximum of 11 relays (1 AMB 33 unit with ASD 533-1, 5 units with 1st RIM 35, 5 units with 2nd RIM 35):

Smoke sensor I / LS-Ü I	**Smoke sensor II / LS-Ü II**	**General**
Alarm smoke sensor I	Alarm smoke sensor II	Fan fault
Pre-signal 1 smoke sensor I	Pre-signal 1 smoke sensor II	Operating voltage fault
Pre-signal 2 smoke sensor I	Pre-signal 2 smoke sensor II	Initial reset fault
Pre-signal 3 smoke sensor I	Pre-signal 3 smoke sensor II	Lithium battery / clock fault
Smoke sensor I dusty	Smoke sensor II dusty	
Smoke sensor I soiled	Smoke sensor II soiled	
Smoke sensor I fault	Smoke sensor II fault	
Pipe blockage sampling pipe I	Pipe blockage sampling pipe II	
Pipe breakage sampling pipe I	Pipe breakage sampling pipe II	
Heating control sampling pipe I	Heating control sampling pipe II	
Alarm 2 smoke sensor I	Alarm 2 smoke sensor II	

The criteria can also be allocated using the OR function (example: smoke sensor dust or soiling together on one relay).

Commissioning

When commissioning the ASD 533, it is necessary to perform an initial reset to automatically adjusting the airflow monitoring on the connected sampling pipe.

If the ASD 533 is operated without "ASD PipeFlow" calculation, the commissioning can be carried out directly on the ASD 533 using the "**EasyConfig**" **process**.

For projects in which the ASD PipeFlow calculation software was used or in which customer-specific adjustments to the device configuration are required, use the "**ASD Config**" configuration software.

Startup

Before the ASD 533 is switched on, make sure all the precautions required for its operation have been taken (see also T 140 287, Sec. 7.1).

- Sampling pipe correctly laid and connected
- Smoke sensors removed from protective packaging, mounted and connected
- Isolation strip on the lithium battery (AMB 33) removed

Startup sequence and procedure:

1. Switch on supply voltage (FACP); the next procedure can be carried out while the fan is ramping up to its definitive speed (takes about 100 s). **The system is immediately armed for alarm**.
2. **"EasyConfig"**: Select the required switch position for operation in accordance with the "***Table of system limits***" (e.g. "***b22***") ➔ see also under "***Re-programming***".
   - or:
   „**ASD Config**": after making adjustments to the configuration (alarm threshold acc. to ASD PipeFlow, other criteria acc. to Tables A and B) select switch position "***X01***", "***X02***" or "***X03***".
3. Set date and time via AMB 33 on "EasyConfig" or from "ASD Config" (adopt settings from PC).
4. After a **minimum waiting time of 5 min** after switch-on, carry out an initial reset (possible only via AMB 33) ➔ see also under „***Initial reset***".
5. The ASD 533 is now ready for operation.

Re-programming

Example: Response grade B, system limit 2, switch position required ***b22***.

Measure	Display	Procedure, remarks
Switch positions ***W01*** to ***W48*** are to be used only after prior consultation with the manufacturer. The airflow monitoring values stored under those switch positions are **not** tested in accordance with EN.		
1. Press the "UP" key	flashing ***C32***	• Displays the default setting
2. Press "UP" key twice until display shows ***b***	in succession ***A*** / ***b***	• Displays the switch position group ***b***
3. Press the "OK" key	***b11***	• Displays the smallest possible position in group ***b***
4. Press the "UP" key until display shows ***b22***	alternatively ***b11*** / ***b12*** / ***b21*** / ***b22***	• Displays the possible positions in group ***b***
5. Press the "OK" key	flashing ***b - -*** (approx. 4 x)	• New setting is programmed
6. Check: Press the "UP" key	flashing ***b22***	• Displays the new setting

Initial reset

Measure	Display	Procedure, remarks
Before carrying out an initial reset – i.e. after switching on the ASD 533 – make sure you observe a **waiting time of at least 5 min**.		
1. Press the "UP" key	flashing ***C32*** or others	• Displays the default setting or the installation-specific switch position
2. Press the "UP" key several times until display shows ***U***	in succession ***A*** to ***U***	• Displays the switch position group ***U***
3. Press the "OK" key	***U01***	• Displays initial reset On
4. Press the "OK" key again	flashing ***U - -*** (5 to max. 120 s)	• Initial reset in progress
5. Wait	flashing point (watchdog indicator)	• Initial reset completed

Filter replacement

When filter monitoring is activated and after expiry of the configured filter service life, a "Filter fault (service life exceeded)" fault is triggered. To remedy, the filter element in a dust filter unit must be replaced. When the expired filter service life (read out via *EasyConfig* switch position ***d*** > ***RE***) is periodically checked, the replacement can take place before the fault is triggered.

For an activated filter replacement the ASD is set to the "**isolate**" state. This insures that during the replacement work falling dust particles from the filter element do not cause a false alarm.

When the ASD 533 housing is closed, the "Start filter replacement" function can be activated by means of the **"Reset" key** (provided the filter monitoring is activated). To do so, press the key **longer than 15 s** (attention: lamp test after 10 s). After 15 s the filter replacement is started and indicated by switching to the "Isolate" state (Fault and LED "Fault"). On an ASD 533-2 (2-channel device) the filter replacement is started simultaneously for both smoke sensors (provided the filter monitoring is activated). When the "Reset" key is deactivated (via ASD Config), the "Start filter replacement" function is not accessible.

After the filter has been replaced, the "Filter replacement" procedure is completed by pressing the **"Reset" key** on the ASD. This cancels the "Isolate" state and resets the fault on the ASD. "Filter service life" monitoring is restarted at 0.

The filter replacement can also be started via *EasyConfig* switch position ***d*** > ***SE***. For information, please refer to Technical Description T 140 287, Sec. 7.8.

Measurements during commissioning

Carry out the following measurements:

- Measure voltage at terminals 1 (+), 2 (-) (also terminals 3 and 4 in the case of a redundant voltage supply) ➔ target value = 12.3 to 13.8 (in 12 VDC operation) and 21.6 to 27.6 VDC (in 24 VDC operation)
- Airflow value in switch positions ***V*** (see also Technical description, T 140 287, Sec. 7.6.1).

Checking fault and alarm release

Test	Procedure	Action
		Block or switch off the fire incident control and remote alerting on superordinate FACP.
Check airflow monitoring	Tape over the sampling holes (adhesive tape); the number depends on the pipe configuration.	• As soon as the resulting change in airflow rate exceeds ±20% (which can also be checked using switch position ***V***), the "Fault" LED begins to flash. • Once the LS-Ü delay (300 s) has elapsed, the ASD triggers a fault ➔ fault on FACP ① / ②.
Check alarm release	Impose smoke at the maintenance sampling hole or sampling hole.	• ASD triggers an alarm ➔ alarm on FACP; check for correct alarm transmission (zone/ range release) on the FACP ① / ②. • Any pre-signals will also release.

① Reset the ASD 533 between each check (please note: resetting the ASD does not reset the FACP).

② For the ASD 533-2 checks have to be carried out for both sampling pipes.

Alternatively, this control can also be performed using the "Test trigger" function from *EasyConfig* switch position ***I***.

Article numbers and spare parts

Short designation		Article number
Aspirating smoke detector ASD 533-1		11-2000001-01-XX
Aspirating smoke detector ASD 533-2		11-2000059-01-XX
Replacement smoke sensor SSD 533		11-2200006-01-XX
SecuriLine eXtended module XLM 35		11-2200003-01-XX
M-Line module ML-SFD		11-2200015-01-XX
SecuriLine module SLM 35		4000286.0101
Relay interface module RIM 35		11-2200031-01-XX
Memory card module MCM 35		11-2200057-01-XX
SD memory card (industrial version)		11-4000007-01-XX
Serial Interface Module SIM 35		11-2200000-01-XX
Serial Master Module SMM 535		11-2200001-01-XX
USB cable, 4.5 m		4301248
Main board AMB 33-1		11-2200004-01-XX
Main board AMB 33-2		11-2200065-01-XX
BCB 35 (without smoke level indicator)		4301220.0101
Aspirating fan unit AFU 35, complete		11-2200052-01-XX
Airflow sensor AFS 35		11-2200051-01-XX
Insect protection screen IPS 35 (set of 2)		11-2300012-01-XX
Lithium battery		11-4000002-01-XX
Cable screw union	M20 (set of 10)	11-4000003-01-XX
	M25 (set of 10)	11-4000004-01-XX
Adapter US cable screw union AD US M-Inch		11-2300029-01-XX
Universal module support UMS 35		11-2200061-01-XX
Technical description ASD 533		T 140 287
Material for the sampling pipe		T 131 194
Commissioning protocol		T 140 299
Data sheets	XLM 35	T 140 088
	ML-SFD	T 140 822
	SLM 35	T 131 197
	RIM 35	T 131 196
	MCM 35	T 131 195
	SIM 35	T 140 011
	SMM 535	T 140 010
AFU 35 installation instructions		T 131 200

Declaration of performance
www.securiton.ch/declaration-of-performance

Dimensioned drawing

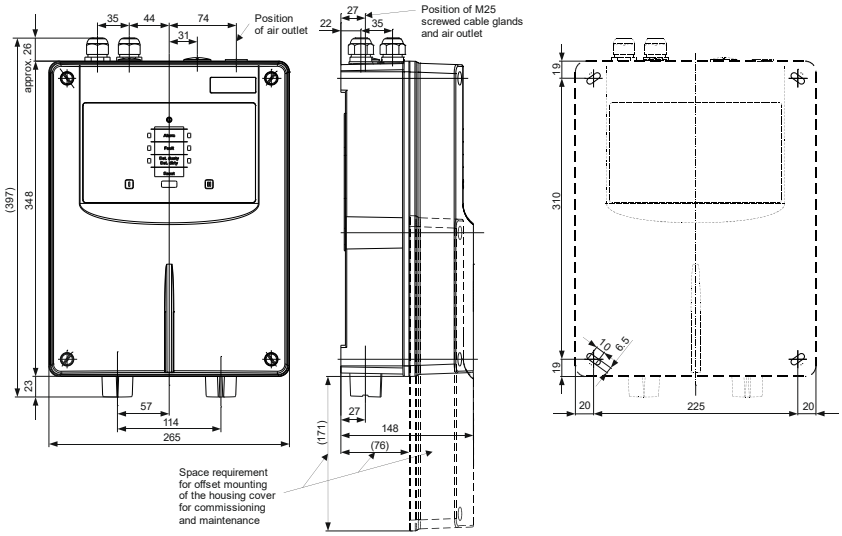

Fig. 5 Detector housing dimensioned drawing

Technical data

Type				ASD 533	
Supply voltage range				10.5 to 30 (**UL/FM = 12.4 to 27**)	VDC
Maximum power consumption, measured at ➔		in 12 VDC operation 10.5 VDC ①	in 24 VDC operation 18 VDC ①	Typical 24 VDC	
ASD 533-1 (at fan speed Level I)	Quiescent/fault	approx. 265	approx. 160	approx. 130	mA
	Alarm	approx. 340	approx. 210	approx. 160	mA
ASD 533-2 (at fan speed Level II)	Quiescent/fault	approx. 370	approx. 220	approx. 170	mA
	Alarm	approx. 450	approx. 270	approx. 205	mA
additionally with 1 RIM 35 unit (all relays triggered)		approx. 15	approx. 10	approx. 7	mA
additionally with 2 RIM 35 units (all relays triggered)		approx. 30	approx. 20	approx. 14	mA
additionally with XLM 35 / ML-SFD / SLM 35		approx. 20	approx. 10	approx. 5	mA
additionally with MCM 35		approx. 25	approx. 15	approx. 10	mA
additionally with SIM 35		approx. 20	approx. 10	approx. 5	mA
SMM 535 (not from ASD but rather from PC via USB connection)				max. 100	mA
Switch-on current peak ② (caused by EMC protection elements on the ASD supply input)				approx. 5 A, for max. 1 ms	
Sampling pipe length				see T 140 287, Sec. 4.2.1	
Sampling pipe diam., typical (inner/outer)				Ø 20 / 25	mm
Max. number of sampling holes				see T 140 287, Sec. 4.2.1	
Sampling hole diameter			Ø 2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5 / 5.5 / 6 / 6.5 / 7		mm
Response range (Sensitivity: Alarm 0,02 %/m – 10 %/m, pre-signals 0,002 %/m – 9 %/m)			EN 54-20, Class A, B, C		
Protection type acc. to IEC 60529 / EN 60529				54	IP
Ambient conditions acc. to IEC 60721-3-3 / EN 60721-3-3				3K5 / 3Z1	class
Extended ambient conditions:					
• Detector housing temperature range				–20 – +60 (**UL max. +40**)	°C
• Sampling pipe temperature range				–20 – +60 ③	°C
• Max. permissible temperature fluctuation in detector housing and sampling pipe operation				20 ③	°C
• Max. permissible storage temperature for detector housing (without condensation)				–20 – +70	°C
• Ambient pressure difference between detector housing and sampling pipe (sampling holes)				must be identical	
• Humidity ambient condition for detector housing (transient without condensation)				95 ③	% rel. hum.
• Humidity ambient condition detector housing and sampling pipe (continuous)				70 ③	% rel. hum.
Max. loading capacity, relay contact				50 (**UL max. 30**)	VDC
				1	A
				30	W
Max. loading capacity per OC output (dielectric strength 30 VDC)				100	mA
Plug-in terminals				2.5	mm²
Cable entry for cable Ø				Ø 5 – 12 (M20) / Ø 9 – 18 (M25)	mm
Sound pressure level				34	dB (A) / 1 m
Housing	material			ABS blend, UL 94-V0	
	colour			grey 280 70 05 / anthracite violet 300 20 05	RAL
Approvals			EN 54-20 / FM 3230 – 3250 / UL 268 7th Ed / ULC-S529 4th Ed		
VdS approval				G 212163	
Dimensions	ASD 533-x (W x H x D)			265 x 397 x 148	mm
Weight	ASD 533-x (incl. SSD 533)			3,535	g

① Power consumption at maximum permitted voltage drop in the electrical installation (guideline value for calculating the conductor cross-section).

② May cause the protective circuit to actuate immediately in the case of power supplies with overload protective circuits (primarily in devices with no emergency power supply and output current of < 1.5 A).

③ Lower or higher temperature ranges are also possible subject to consultation with the manufacturer. The manufacturer must be consulted if used in the condensation range.

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ASD 532

Aspirating Smoke Detector

As of production version 131221 and FW version 01.04.xx

The ASD 532 aspirating smoke detector has the task of continuously taking air samples via a sampling pipe tube network from a monitored area and feeding the samples to a smoke sensor.

The ASD 532 consists of the detector housing and a sampling pipe tube network. The sampling pipe has several sampling holes whose size is such that each hole extracts the same amount of air. The sampling pipe may be I-, U-, T-, H-, or E-shaped. The sampling pipes are usually symmetrically designed. Asymmetrical sampling pipe tube networks can also be implemented with the help of the “ASD PipeFlow” calculation software.

Fig. 1 ASD 532

Description

Integrated in the detector housing is a fan which, in conjunction with the sampling pipes, ensures an uninterrupted supply of air to the detector housing. Airflow monitoring detects any pipe blockages and pipe breakages in the sampling pipe.

The ASD 532 can be equipped with the following smoke sensor type:

- SSD 532-1 Sensitivity range 0.5 %/m to 10%/m
- SSD 532-2 Sensitivity range 0.1%/m to 10%/m
- SSD 532-3 Sensitivity range 0.02%/m to 10%/m

The ASD 532 aspirating smoke detector has two slots for additional modules. The following modules can be fitted:

- XLM 35 SecuriLine eXtended module
- ML-SFD M-Line module
- RIM 36 Relay interface module with 5 relays (max. units)
- SIM 35 serial interface module
- UIM 35 universal interface module

The ASD 532 can be connected to a superordinate FACP by means of potential-free change-over contacts.

With the installation of an **XLM 35** or **ML-SFD** the ASD 532 can be ideally connected via the addressable loop to the SecuriFire and Integral fire alarm systems.

The **RIM 36** is available as a further installation option. This module enables the availability of all three pre-signal levels as well as the states “smoke sensor dirty” and “LS-Ü blockage” as relay contacts. The relays are also freely programmable via the “ASD Config” configuration software.

Up to 250 ASDs can be networked with the **SIM 35**; they can then be visualised and operated from a PC using “ASD Config”.

The ASD 532 aspirating smoke detector can be used for:

- **Equipment monitoring**: EDP systems, electrical distributors, switch cabinets, etc.
- **Space surveillance**: EDP rooms, ultra-clean rooms, warehouses, hollow floors, protection of cultural assets, transformer stations, prison cells, etc.

The ASD 532 can also be deployed in areas where normally conventional point detectors are used. Local regulations and provisions must be observed from case to case.

The response behaviour of the ASD 532 has been tested in compliance with EN 54-20, Class A, B and C.

When setting up ASD 532 fire alarm systems, the information and specifications in **“Technical Description ASD 532”** must be observed and adhered to. This includes among others:

- **General** Section 1
- **Safety informations** Section 1.2.2
- **Planning** Section 4
- **Mounting** Section 5
- **Installation** Section 6
- **Commissioning** Section 7
- **Operation** Section 8

Opening the detector housing

Press the **rotary snap locks** down **firmly** with a screwdriver (at least No. 5) toward the housing base and then **turn** 90° to open them. The position of the lock slit shows the current status:

- angled approx. 45° toward detector housing corner = closed;
- angled approx. 45° toward detector housing edge = open.

In either position the rotary snap locks **must** snap into place.

Connection

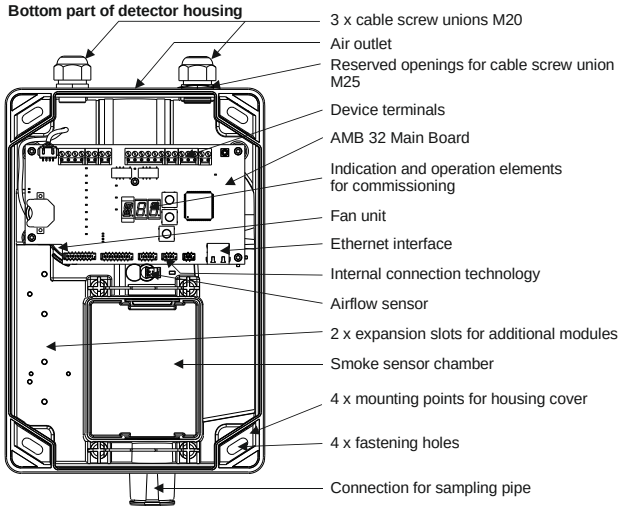
Bottom part of detector housing
3 x cable screw unions M20
Air outlet
Reserved openings for cable screw union M25
Device terminals
AMB 32 Main Board
Indication and operation elements for commissioning
Fan unit
Ethernet interface
Internal connection technology
Airflow sensor
2 x expansion slots for additional modules
Smoke sensor chamber
4 x mounting points for housing cover
4 x fastening holes
Connection for sampling pipe

Fig. 2 Inside view of the ASD 532

Device connections on the AMB 32

The electrical connection is by means of plug-in terminals.

Terminal	Signal	
1	+14 to +30 VDC ①	Main power supply line
2	0 V	
3	+14 to +30 VDC ①	Redundant power supply line
4	0 V	
5	+ Supply (for OC consumers)	
6	Output Fault, OC (all events)	
7	Output Alarm, OC	
8	Rel. 1 “(NO)”	Fault ②
9	Rel. 1 “(NC)”	
10	Rel. 1 “COM”	
11	Rel. 2 “NO”	Alarm
12	Rel. 2 “NC”	
13	Rel. 2 “COM”	
14	Input Reset external +	Opto-isolator input reset
15	Input Reset external -	
16	OEM +	Opto-isolator input OEM ③ ④
17	OEM -	
18	PWR-O+	Power supply for accessory bus (14 – 30 VDC)
19	PWR-O-	
20	Data-	RS-485 connection for accessory bus
21	Data+	

① UL/FM: +16.4 to +27 VDC
② The “Fault” relay has picked up in the normal state ➔ contact Te. 10/8 closed, 10/9 open (ASD 532 under voltage; no fault present).
③ In some cases actuations via the OEM input may **not** comply with the requirements of **EN 54-20** (use only consulting with the manufacturer).
④ The OEM input is **not** line monitored.

Terminal assignment of the additional modules

The terminal assignments of the additional modules are shown in the corresponding data sheets (see “Article numbers and spare parts”).

Wiring principle

Examples of and information on the wiring principle can be found in the Technical Description ASD 532, T 140 421, Sec. 6.

Using the smoke sensors

The ASD 532 ships with the smoke sensor not fitted. It is application specific (according to required sensitivity range), purchased from the manufacturer, and installed after the detector housing is mounted (see **Fig. 3**).

- Always leave the smoke sensor inside its protective packaging until just before it is to be installed in the detector housing.
- Depending on the situation – e.g. if there is a long time between mounting and commissioning or if the environment is extremely dusty (construction work) – the smoke sensor should be installed just before commissioning the ASD 532.
- Before installing the smoke sensor check that the insect protection screens are properly fitted to the smoke sensor chamber at the air inlet and outlet.
- The smoke sensor chamber must be absolutely free of any dirt and/or dust. Remove any residue resulting from mounting the detector housing.

Check the installation position when installing the smoke sensor. The connector plug of the smoke sensor must be face away from the slots of the additional modules. The anti-twist rib on the smoke sensor case prevents an incorrect installation position.

The smoke sensor is secured inside the ASD housing using the two lock clamps. The electrical connection to the AMB 32 main board is accomplished with the supplied ribbon cable.

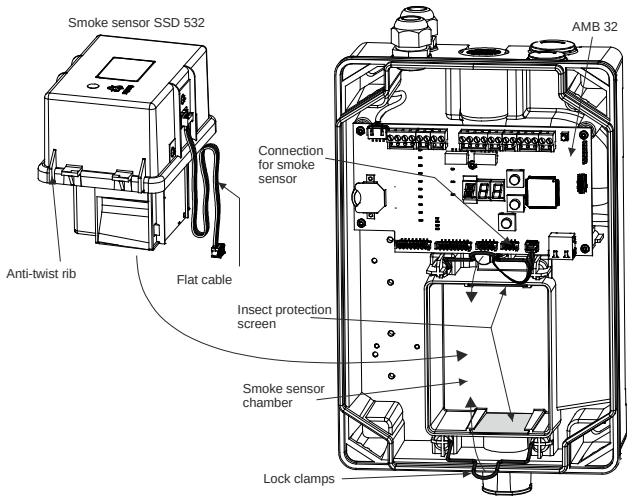

Fig. 3 Deploying the smoke sensors

Displays on the control unit

Several LEDs on the control unite indicate the current state of the ASD 532.

Function / state	Operation	Alarm	Fault	Det. dusty / dirty	Smoke level
	green	red	yellow	yellow	yellow
System Off (no voltage)					
System inactive (reset external)	On		½ T		
Smoke sensor Off (from FACP)	On		½ T		
Quiescent state	On				
Pipe blockage/breakage, delay running ①	On		1 T		
Pipe blockage/breakage, fault triggered	On		On		
Fan tacho signal missing	On		On		
Fault triggered	On		On		
Smoke level 1–10 ②	On				On
Pre-signal 1, 2, 3 ②	On				1 T
Alarm	On	On			
Smoke sensor filter fault	On			2 T	
Smoke sensor dusty	On			1 T	
Smoke sensor dirty	On			½ T	
Smoke sensor fault	On			On	
Lamp test (press “Reset” 10 s)	1 T	1 T	1 T	1 T	1 T

① No fault triggered (triggers only after delay time has expired ➔ “Fault” continuously lit).

② The LED of the respective smoke level 1–10 (corresponds to 10–100% of alarm threshold) is continuously lit when exceeded. If a pre-signal is programmed on this level, the LED subsequently begins to flash (default: VS 1 = level 3, VS 2 = level 5, VS 3 = level 7).

T = flashing display; ½ s cycle / 1 s cycle / 2 s cycle

Indicators on the AMB 32 main board

The AMB 32 has a 3-digit segment display enabling the following outputs and displays:

- flashing, point and ***AL*** = Autolearning running;
- flashing, point and ***Fr*** = filter replacement is running;
- flashing point and continuously lit point = day/night control active;
- switch position ***d*** > ***RE*** = filter service life;
- switch position ***E*** = event memory ***E01*** to ***E99***;
- switch position ***F*** = firmware version;
- Push button “UP” = set configuration ***A11*** to ***X03***;
- switch position ***V*** = airflow values (airflow rate);
- flashing ***000*** = invalid entry;
- flashing ***U - -*** = initial reset is running;
- flashing ***IA1***, ***IF1***, ***IP1***, ***IE1*** = test trigger is activated.

Programming

The ASD 532 has several switch positions that are configured with permanently assigned parameters:

- normative system limits according to EN 54-20, Class A to C, settings ***A11*** to ***C31***;
- non-normative system limits, settings ***W01*** to ***W44***;
- configurable positions for settings after using “ASD PipeFlow” and/or changing “ASD Config” or SecuriFire or Integral FACP (XLM 35 / ML-SFD), ***X01*** to ***X03***.

The parameters are saved at the factory with values for compliance with EN 54-20. Changing the parameters may result in non-compliance with EN 54-20. Re-programming on the ASD 532 using “ASD Config” may be carried out only by the manufacturer or by persons under the supervision of and trained by the manufacturer.

Switch positions on the Main Board AMB 32

Pos.	Area / Display	Purpose
A	***A11***	acc. to EN 54-20, class A
b	***b11*** / ***b21***	acc. to EN 54-20, class B
C	***C11*** / ***C21*** / ***C31***	acc. to EN 54-20, class C
d	Polling (***RE***) Setting (***SE***) ↳ ***on*** / ***T*** / ***R*** / ***oFF***	***on*** = On / ***oFF*** = Off ***T*** = filter service life ***R*** = filter replacement ***ch1*** = channel I
E	***E01*** to ***E99*** ↳ ***G00*** to ***G99***	Event memory ***E01*** – ***E99*** ↳ Event group ***G00*** – ***G99***
F	***F00*** to ***F99*** (3 x)	Displays firmware version
I	***IA1*** ***IF1*** ***IP1*** ***IE1***	Triggering; test alarm (***IA1***) Test fault (***IF1***) Test pre-signal (***IP1***) Test alarm 2 (***IE1***)
N	Polling (***RE***) Setting (***SE***) ↳ ***FSE***	IP configuration; Polling and factory setting
o	***o00***	Logs off additional modules (optional modules)
T	***Y10*** to ***Y99*** / ***M01*** to ***M12*** ***d01*** to ***d31*** / ***H00*** to ***H23*** ***M00*** to ***M59***	Polling (***RE***) and setting (***SE***) the date and time
U	***U01***	Executes initial reset
V	***V01***, ***000*** to ***255***	Volume rate of flow output in %
W	***W01*** to ***W44***	non-normative
X	***X01*** to ***X03***	configurable

The table lists only the available switch positions. For information about the input procedure please refer to Technical Description T 140 421, Sec. 8.3.

System limits without ASD PipeFlow calculation

The system limits apply to the planning without using the ASD PipeFlow calculation software. There are two areas, with the following meaning:

- **Normative system limits** compliant with EN 54-20, Class A to C,
  Switch positions ***A11*** to ***C31***;
- **Non-normative system limits**,
  Switch positions ***W01*** to ***W44***.

Normative system limits

Stored under switch positions ***A11*** to ***C31*** are values which are necessary in terms of alarm response sensitivity and airflow monitoring for compliance with EN 54-20 Class A to C. The switch position designation is deciphered as follows:

- First digit Response grade ***A***, ***b***, ***C*** compliant with EN 54-20;
- Second digit System limit ***1***, ***2***, ***3*** (pipe topology);
- Third digit Number of tube networks ***1***, (**only 1 possible**).

Example: ***b21*** Response grade ***b*** / system limit ***2*** / ***1*** sampling pipe tube network.

Non-normative system limits

Switch positions ***W01*** to ***W44*** contain system limits which fulfil **only** the alarm response sensitivity compliant with EN 54-20 Class A to C, **but not** the normative limits with regard to airflow monitoring. As they are identical with the system limits ***A11*** to ***C31*** in terms of tube topology (tube network length, number of sampling holes), the switch positions ***W01*** to ***W44*** are also included in the tables below. Additional information about switch settings ***W01*** to ***W44*** concerning number of tube networks and airflow monitoring can be found in Technical Description T 140 421, Sec. 4.4.4.4.

Switch settings ***W01*** to ***W44*** may be used only after consulting with the manufacturer. The airflow monitoring values stored under those switch positions are **not** tested in accordance with EN. For more information on using the table of system limits, please refer to the Technical Description T 140 421, Sec. 4.4.4.3 and 4.4.4.4.

Table of system limits for planning without ASD PipeFlow calculation

Compliant with EN 54-20, Class A (highly sensitive)

Shape	System limit	Switch position compliant with EN 54-20	Switch position not standards compliant	Smoke sensor type SSD 532	Alarm threshold (%/m)	Length from ASD to last T-piece/cross	Max. length from ASD to farthest sampling hole	Number of sampling holes per sampling branch	Max. total length of sampling pipe per tube network (smoke sensor)
I	1	A11	W01 – W04	–3	0.045	---	40 m	1 – 6	40 m
U / T	1	A11	W01 – W04	–3	0.045	1 – 20 m	40 m	1 – 3	80 m
H	1	A11	W01 – W04	–3	0.045	1 – 20 m	25 m	1 – 2	100 m
E	1	A11	W01 – W04	–3	0.045	1 – 20 m	30 m	1 – 3	90 m

Compliant with EN 54-20, Class B (sensitive)

I	1	b11	W09 – W12	–2	0.255	---	30 m	1 – 4	30 m
	2	b21	W17 – W20	–3	0.090	---	40 m	5 – 8	40 m
U / T	1	b11	W09 – W12	–2	0.255	1 – 20 m	30 m	1 – 2	60 m
	2	b21	W17 – W20	–3	0.090	1 – 20 m	40 m	3 – 4	80 m
H	1	b11	W09 – W12	–2	0.255	1 – 20 m	20 m	1	80 m
	2	b21	W17 – W20	–3	0.090	1 – 20 m	25 m	2 – 3	100 m
E	1	b11	W09 – W12	–2	0.255	1 – 20 m	20 m	1	60 m
	2	b21	W17 – W20	–3	0.090	1 – 20 m	30 m	2 – 3	90 m

Compliant with EN 54-20, Class C (standard)

I	1	C11	W25 – W28	–1	1.090	---	30 m	1 – 4	30 m
	2	C21	W33 – W36	–2	0.645	---	40 m	5 – 8	40 m
	3	C31	W41 – W44	–2	0.305	---	60 m	9 – 12	60 m
U / T	1	C11	W25 – W28	–1	1.090	1 – 10 m	20 m	1 – 2	40 m
	2	C21	W33 – W36	–2	0.645	1 – 20 m	30 m	3 – 4	60 m
	3	C31	W41 – W44	–2	0.305	1 – 20 m	40 m	5 – 6	80 m
H	1	C11	W25 – W28	–1	1.090	1 – 10 m	15 m	1	60 m
	2	C21	W33 – W36	–2	0.645	1 – 20 m	20 m	2	80 m
	3	C31	W41 – W44	–2	0.305	1 – 20 m	25 m	3 – 4	100 m
E	1	C11	W25 – W28	–1	1.090	1 – 10 m	20 m	1 – 2	60 m
	2	C21	W33 – W36	–2	0.645	1 – 20 m	25 m	3	75 m
	3	C31	W41 – W44	–2	0.305	1 – 20 m	30 m	4	90 m

Sampling holes for planning with ASD PipeFlow calculation

The tables below show the corresponding hole diameters for the numbers in **Fig. 4** depending on the number of sampling holes per sampling branch.

I-shaped sampling pipes												
Number of sampling holes	Hole diameter in mm for the sampling hole number as of ASD											
	1	2	3	4	5	6	7	8	9	10	11	12
1	5.0											
2	4.0	5.0										
3	4.0	4.0	5.0									
4	3.5	3.5	4.0	5.0								
5	3.5	3.5	3.5	4.0	5.0							
6	2.5	2.5	2.5	2.5	3.0	5.0						
7	2.5	2.5	2.5	2.5	2.5	2.5	5.0					
8	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0				
9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5.0			
10	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	3.0	7.0		
11	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	4.0	7.0	
12	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	4.0	7.0

U/T-shaped sampling pipes						
Number of sampling holes per sampling branch	Hole diameter in mm for the sampling hole number from the ASD					
	1	2	3	4	5	6
1	5.0					
2	4.0	5.0				
3	4.0	4.0	5.0			
4	4.0	4.0	4.0	5.0		
5	4.0	4.0	4.5	5.0	6.5	
6	3.0	3.0	3.5	3.5	4.0	6.5

H/E-shaped sampling pipes				
Number of sampling holes per sampling branch	Hole diameter in mm for the sampling hole number from the ASD			
	1	2	3	4
1	5.0			
2	4.0	5.0		
3	4.0	4.0	5.5	
4	3.0	3.0	3.5	5.5

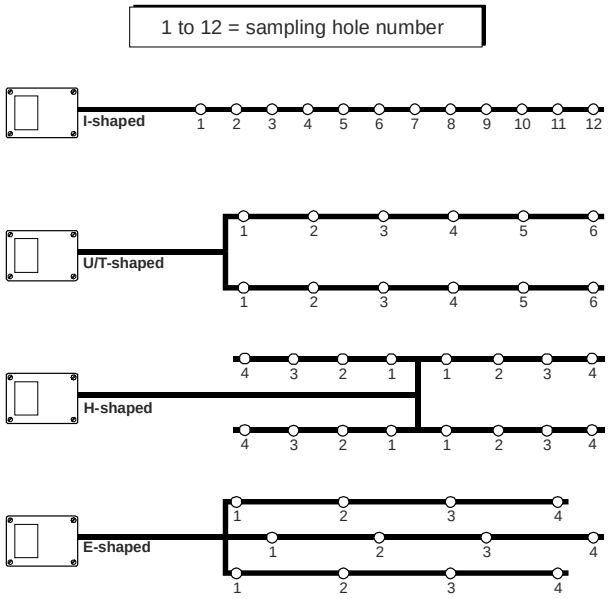

Fig. 4 Size of sampling holes

Configuration options, Table A:

The following criteria can be set for each smoke sensor/sampling pipe. Also, the criteria for day/night control can be separately set. Configuration changes are saved on ***X01*** to ***X03***.

Sector • Parameters	Default setting	Range	Resolution / Levels	Saving after change
Alarm 2				
• Alarm 2 On / Off	Off	Off / On		***X01*** – ***X03***
• Sensitivity (always at least 20% above alarm)	1%/m	–10%/m	0.0002%/m	***X01*** – ***X03***
• Alarm 2 delay	2 s	0 s – 60 s	1 s	***X01*** – ***X03***
• Alarm 2 latching	On	On / Off		***X01*** – ***X03***
• Holding time for area switchover (AI 2 to AI)	20	10 – 250	1 s	***X01*** – ***X03***
Alarm				
• Alarm threshold (dependent on smoke sensor type and response class according to EN 54-20)	***C11***	0.02 – 10%/m 0.1 – 10%/m 0.5 – 10%/m	0.0002%/m	***X01*** – ***X03***
• Smoke level value averaging (number)	4	1 – 10	1	***X01*** – ***X03***
• Alarm delay (**UL/ULC max. 30 s**)	2 s	0 s – 60 s	1 s	***X01*** – ***X03***
• Alarm cascading	Off	Off / On		***X01*** – ***X03***
• Alarm latching	On	On / Off		***X01*** – ***X03***
Pre-signal				
• Pre-signal 1 On / Off	On	On / Off		***X01*** – ***X03***
• Pre-signal 2 On / Off	On	On / Off		***X01*** – ***X03***
• Pre-signal 3 On / Off	On	On / Off		***X01*** – ***X03***
• Pre-signal 1 (100% = alarm threshold)	30%	10 – 90%	10%	***X01*** – ***X03***
• Pre-signal 2 (100% = alarm threshold)	50%	VS 1 + 10 – 90%	10%	***X01*** – ***X03***
• Pre-signal 3 (100% = alarm threshold)	70%	VS 2 + 10 – 90%	10%	***X01*** – ***X03***
• Pre-signal delay (VS 1 – VS 3)	2 s	0 s – 60 s	1 s	***X01*** – ***X03***
• Pre-signal latching	Off	Off / On		***X01*** – ***X03***
Smoke sensor dust/dirt				
• Smoke sensor dust On / Off	On	On / Off		***X01*** – ***X03***
• Smoke sensor dirt On / Off	On	On / Off		***X01*** – ***X03***
• Dust threshold (% of AI)	50%	5 – 60%	5%	***X01*** – ***X03***
• Dirt threshold (% of AI)	75%	65 – 100%	5%	***X01*** – ***X03***
• Dust latching	On	On / Off		***X01*** – ***X03***
• Dirt latching	On	On / Off		***X01*** – ***X03***
• Smoke sensor fault delay	30 s	0 s – 60 s	1 s	***X01*** – ***X03***
Airflow monitoring				
• LS-Ü pipe blockage On / Off	On	On / Off		***X01*** – ***X03***
• LS-Ü pipe breakage On / Off	On	On / Off		***X01*** – ***X03***
• LS-Ü sensitivity ①	±20% ①	±1 – ±70%	± 1%	***X01*** – ***X03***
• LS-Ü value averaging (number)	20	1 – 30	1	***X01*** – ***X03***
• LS-Ü delay ①	300 s ①	10 s – 3,600 s	1 s	***X01*** – ***X03***

① Increased values are configured for switch settings ***W01*** to ***W44***; these are **not** tested for EN compliance (see Technical Description T 140 421, Sec. 4.4.4.4).

Configuration options, Table B:

The following criteria apply to the entire ASD 532. Configuration changes are stored in connection with the adjustments from Table A, likewise on one of the user configurable switch positions ***X01*** to ***X03***.

Sector • Parameters	Default setting	Range	Resolution / levels	Saving after change
Autolearning				
• Autolearning On / Off	Off	On		***X01*** – ***X03***
• Autolearning duration	3 days	1 min to 14 days	min, h, days	***X01*** – ***X03***
• Autolearning factor (of measured AI threshold)	1.5	1.1 – 10 x		***X01*** – ***X03***
Day/night control & weekday control				
• Day/night control On / Off	Off	Off / clock / FACP / input “OEM”		***X01*** – ***X03***
• Day start time (only with “Clock”)	06:00	00:00 – 24:00	1 min	***X01*** – ***X03***
• Night start time (only with “Clock”)	20:00	00:00 – 24:00	1 min	***X01*** – ***X03***
• Weekday control (only with “Clock”)	On	Mon. to Sun.	days	***X01*** – ***X03***

➔➔

Continuation, Table B:

General faults				
• Lithium battery / clock fault	On	On / Off		***X01 – X03***
Fan				
• Fan speed	Level II	Level I to III	1	***X01 – X03***
Deactivate / switch off sensor				
• Smoke sensor	On	On / deactivated		***X01 – X03***

Configuration options, Table C:

Independent configurations. These can be changed regardless of the switch position in the ASD 532.

Sector • Parameters	**Default setting**	**Selection**
Clock		
• Year, month, day, hour, minute	---	minutes – year
Relay / OC output / reset key / various		
• Relay 1, 1st RIM 36	Pre-signal 1	in accordance with ***"Relay allocation configuration options"***
• Relay 2, 1st RIM 36	Pre-signal 2	
• Relay 3, 1st RIM 36	Pre-signal 3	
• Relay 4, 1st RIM 36	Smoke sensor dirt	
• Relay 5, 1st RIM 36	Sampling pipe blockage	
• Relay 1, 2nd RIM 36	--	
• Relay 2, 2nd RIM 36	--	
• Relay 3, 2nd RIM 36	--	
• Relay 4, 2nd RIM 36	--	
• Relay 5, 2nd RIM 36	--	
• Reset key On / Off	On	On / Off
• Perform initial reset	---	On / Off
• OEM input signal	Off	Off / OEM input alarm / OEM input fault / Day/night switching
• Isolate smoke sensor	normal operation	Isolate / normal operation
• Filter monitoring (smoke sensor)	Off	Off / On
• Filter service life	6 months	1 – 24 months
• Read out operation time	---	months / days
• Filter replacement	---	start / finish

Relay allocation configuration options:

The following criteria are freely programmable on max. 10 relays (5 units on 1st RIM 36, 5 units on 2nd RIM 36):

Smoke sensor / LS-Ü	**General**
Smoke sensor alarm	Fan fault
Pre-signal 1	Operating voltage fault
Pre-signal 2	Initial reset fault
Pre-signal 3	Lithium battery / clock fault
Smoke sensor dust	
Smoke sensor dirt	
Smoke sensor fault	
Sampling pipe blockage	
Pipe breakage sampling pipe	
Alarm 2	

The criteria can also be allocated using the OR function (e.g. smoke sensor dust or dirt together on one relay).

Commissioning

When commissioning the ASD 532, it is necessary to perform an initial reset to automatically adjusting the airflow monitoring on the connected sampling pipe.

If the ASD 532 is operated without “ASD PipeFlow” calculation, the commissioning can be carried out directly using the “**EasyConfig**” **process** directly on the ASD 532.

For projects in which the ASD PipeFlow calculation software was used or in which customer-specific adjustments to the device configuration are required, use the **ASD Config** configuration software.

Starting up

Before the ASD 532 is switched on, make sure all the precautions required for its operation have been taken (see also T 140 421, Sec. 7.1).

- Sampling pipe correctly laid and connected;
- Smoke sensors built in and connected;
- Isolation strip on the lithium battery (AMB 32) removed.

Startup sequence and procedure:

1. Switch on supply voltage (FACP); the next procedure can be carried out while the fan is ramping up to its definitive speed (takes about 100 s). **The system is immediately armed for alarm**.
2. **“EasyConfig”**: Select necessary switch setting for operation according to ***“System limit table”*** (e.g. “***b21***”) ➔ see ***“Re-programming”***.
   - or:
   “ASD Config”: after making adjustments to the configuration (alarm threshold according to ASD PipeFlow, other criteria according to Tables A and B) select switch position “***X01***”, “***X02***” or “***X03***”.
3. Set date and time via AMB 32 on “EasyConfig” or from “ASD Config” (adopt settings from PC).
4. Following a **minimum waiting time of 2 min** after switching on, an initial reset must be performed (possible only via AMB 32) ➔ see “***Initial reset***”.
5. The ASD 532 is now ready for operation.

Re-programming

Example: Response grade B, system limit 2, ASD 532, switch position required ***b21***.

Measure	Display	Procedure Remark
Switch settings ***W01*** to ***W44*** may be used only after consulting with the manufacturer. The airflow monitoring values stored under those switch positions are **not** tested in accordance with EN.		
1. Press the “UP” key	flashing ***C31***	• Displays the default setting
2. Press “UP” key twice until display shows ***b***	in succession ***A*** / ***b***	• Displays the switch position group ***b***
3. Press the “OK” key	***b11***	• Displays the smallest possible position in group ***b***
4. Press “UP” key until display shows ***b21***	in succession ***b11*** / ***b21***	• Displays the possible positions in group ***b***
5. Press the “OK” key	flashing ***b - -*** (approx. 4 x)	• New setting is programmed
6. Check: Press the “UP” key	flashing ***b21***	• Displays the new setting

Initial reset

Measure	Display	Procedure Remark
Before performing an initial reset after switching on the ASD 532, a **waiting time of at least 2 min** must be observed.		
1. Press the “UP” key	Flashing ***C31*** or other	• Displays the default setting or the installation-specific switch position
2. Press the “UP” key several times until display shows ***U***	in succession ***A*** to ***U***	• Displays the switch position group ***U***
3. Press the “OK” key	***U01***	• Displays initial reset On
4. Press the “OK” key again	flashing ***U - -*** (5 to max. 120 s)	• Initial reset in progress
5. Wait	flashing point (watchdog indicator)	• Initial reset completed

Filter replacement

When filter monitoring is activated and after expiry of the configured filter service life, a “Filter fault (service life exceeded)” fault is triggered. To remedy, the filter element in a dust filter unit must be replaced. When the expired filter service life (read out via *EasyConfig* switch position ***d*** > ***RE***) is periodically checked, the replacement can take place before the fault is triggered.

For an activated filter replacement the ASD is set to the “**isolate**” state. This insures that during the replacement work falling dust particles from the filter element do not cause a false alarm.

When the ASD 532 housing is closed, the “Start filter replacement” function can be activated by means of the **“Reset” key** (provided the filter monitoring is activated). To do so, press the key **longer than 15 s** (attention: lamp test after 10 s). After 15 s the filter replacement is started and indicated by switching to the “Isolate” state (LED “Fault”). When the “Reset” key is deactivated (via ASD Config), the “Start filter replacement” function is not accessible.

After the filter has been replaced, the “Filter replacement” procedure is completed by pressing the **“Reset” key** on the ASD. This cancels the “Isolate” state and resets the fault on the ASD. “Filter service life” monitoring is restarted at 0.

The filter replacement can also be started via *EasyConfig* switch position ***d*** > ***SE***. For information please refer to Technical Description T 140 421, Section 7.8.

Measurements / Commissioning protocol

Carry out the following measurements:

- Measure voltage at terminals 1 (+), 2 (-) (also terminals 3 and 4 if redundant supply) ➔ target value = 17.6 to 27.6 VDC.
- Airflow values in switch settings ***V*** (see Technical Description T 140 421, Sec. 7.6.1).

The commissioning protocol is like a personal history of the ASD 532 and should therefore be filled out conscientiously and completely and stored in the ASD 532. If required, a copy can be made and stored in the system dossier.

Checking fault and alarm release

Test	Procedure	Action
		Block or switch off fire incident control and remote alerting on the superordinate FACP.
Check airflow monitoring	Tape over the sampling holes (adhesive tape); the number depends on the pipe configuration.	• As soon as the resulting change in airflow rate exceeds ±20% (which can also be checked using switch position ***V***), the "Fault" LED begins to flash. • Once the LS-Ü delay (300 s) has elapsed, the ASD triggers a fault ➔ fault on FACP ①.
Check alarm release	Impose smoke at the maintenance sampling hole or sampling hole.	• ASD triggers an alarm ➔ alarm on FACP; check for correct alarm transmission (zone/range release) on the FACP①. • Any pre-signals will also release.

① Reset the ASD 532 between each check (please note: resetting the ASD does not reset the FACP).

Article numbers and spare parts

Short designation		Article number
Aspirating Smoke Detector ASD 532		11-2000003-01-XX
Smoke sensor SSD 532-1; 0.5%/m – 10%/m		11-2000004-01-XX
Smoke sensor SSD 532-2; 0.1%/m – 10%/m		11-2000004-02-XX
Smoke sensor SSD 532-3; 0.02%/m – 10%/m		11-2000004-03-XX
SecuriLine eXtended module XLM 35		11-2200003-01-XX
M-Line module ML-SFD		11-2200015-01-XX
Relay interface module RIM 36		11-2200005-01-XX
Serial interface module SIM 35		11-2200000-01-XX
Serial master module SMM 535		11-2200001-01-XX
SD memory card (industrial version)		11-4000007-01-XX
Main board AMB 32		11-2200013-01-XX
Aspirating fan unit AFU 32, complete		11-2200008-01-XX
Air flow sensor AFS 32		11-2200007-01-XX
Insect protection screen IPS 35 (set of 2)		11-2300012-01-XX
Lithium battery		11-4000002-01-XX
Cable screw union	M20 (set of 10)	11-4000003-01-XX
	M25 (set of 10)	11-4000004-01-XX
Adapter US cable screw union AD US M-Inch		11-2300029-01-XX
Universal module support UMS 35		4301252.0101
Technical description ASD 532		T 140 421
Material for the sampling pipe		T 131 194
Commissioning protocol		T 140 423
Data sheets	XLM 35	T 140 088
	ML-SFD	T 140 822
	RIM 36	T 140 364
	SIM 35	T 140 011
	SMM 535	T 140 010
Installation instructions AFU 32		T 140 426

Declaration of performance
www.securiton.ch/declaration-of-performance

Dimensioned drawing

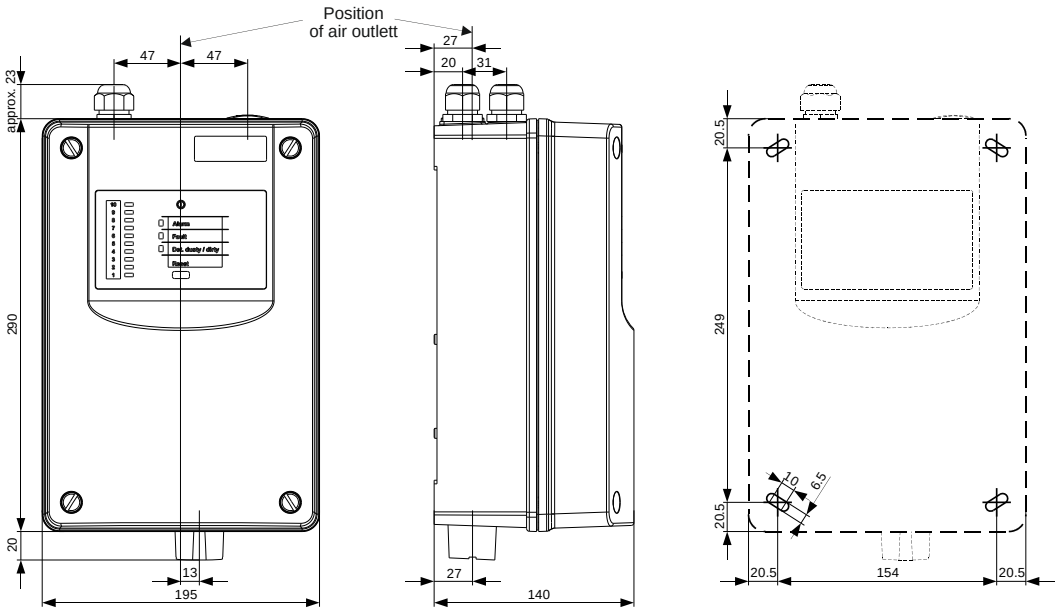

Fig. 5 Detector housing dimensioned drawing

Technical data

Type			ASD 532	
Supply voltage range			14 to 30 (**UL/FM = 16.4 bis 27**)	VDC
Max. power consumption, measured in			typical	
Fan speed level III and at ➔		14 VDC ①	24 VDC	
ASD 532	Quiescent / fault	approx. 170	approx. 100	mA
	Alarm	approx. 200	approx. 115	mA
additionally with 1x RIM 36 (all relays triggered)		approx. 30	approx. 15	mA
additionally with 2x RIM 36 (all relays triggered)		approx. 60	approx. 30	mA
additionally with XLM 35 / ML-SFD		approx. 15	approx. 5	mA
additionally with SIM 35		approx. 15	approx. 5	mA
SMM 535 (not from ASD but rather from PC via USB connection)			max. 100	mA
Switch-on current peak ② (caused by EMC protection elements on the ASD supply input)			approx. 5 A for max. 1 ms	
Sampling pipe length			see T 140 421, Sec. 4.2.1	
Sampling pipe diameter, typical (inner/outer)			Ø 20 / 25	mm
Max. number of sampling holes			see T 140 421, Sec. 4.2.1	
Sampling hole diameter		Ø 2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5 / 5.5 / 6 / 6.5 / 7		mm
Response range			EN 54-20, Class A, B, C	
Protection type compliant with IEC 60529 / EN 60529			54	IP
Ambient conditions compliant with IEC 60721-3-3 / EN 60721-3-3			3K5 / 3Z1	class
Extended ambient conditions:				
• Detector housing temperature range			–20 – +60 (**UL max. +40**)	°C
• Sampling pipe temperature range			–20 – +60 ③	°C
• max. permissible temperature fluctuation in detector housing and sampling pipe operation			20 ③	°C
• max. permissible storage temperature for detector housing (without condensation)			–30 – +70	°C
• Ambient pressure difference between detector housing and sampling pipe (sampling holes)			must be identical	
• Humidity ambient condition for detector housing (transient without condensation)			95 ③	% rel. h
• Humidity ambient condition (continuous)			70 ③	% rel. h
Max. loading capacity, relay contact			50 (**UL max. 30**)	VDC
			1	A
			30	W
Max. loading capacity per OC output (dielectric strength 30 VDC)			100	mA
Plug-in terminals			2.5	mm²
Cable entry for cable Ø			Ø 5 – 12 (M20) / Ø 9 – 18 (M25)	mm
Sound pressure level for fan speed level I / II / III			25 / 31 / 39	dB (A) / 1 m
Housing	material		ABS blend, UL 94-V0	
	Colour		grey 280 70 05 / anthracite violet 300 20 05	RAL
Approvals			EN 54-20 / EN 54-27 / FM 3230-3250 / UL 268 7th Ed / UL 268A 4th Ed / ULC-S529 4th Ed	
VdS approval			G 215101	
Dimensions	ASD 532 (W x H x D)		195 x 333 x 140	mm
Weight	ASD 532 (incl. SSD 532-x)		2,000	g

① Power consumption at maximum permitted voltage drop in the electrical installation (decisive value for calculating the conductor cross-section).

② May cause the protective circuit to trigger immediately in the case of power supplies with overload protective circuits (primarily in devices with no emergency power supply and output current of < 1.5 A).

③ Lower or higher temperature ranges are also possible subject to consultation with the manufacturer. The manufacturer must be consulted if the device is used in the condensation range.

Changes to Index “d” on pages: 1, 2, 3, 8, 9, 10

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ASD 531

Aspirating Smoke Detector

As of production version 131221 and FW version 01.04.xx

The ASD 531 aspirating smoke detector has the task of continuously taking air samples via a sampling pipe tube network from a monitored area and feeding the samples to a smoke sensor.

The ASD 531 consists of the detector housing and a sampling pipe tube network. The sampling pipe has several sampling holes whose size is such that each hole extracts the same amount of air. The sampling pipe may be I-, U-, T-, H-, or E-shaped. The sampling pipe is symmetrically designed in principle. Asymmetrical sampling pipe tube networks can also be implemented with the help of the “ASD PipeFlow” calculation software.

Fig. 1 ASD 531

Description

Integrated in the detector housing is a fan which, in conjunction with the sampling pipe, ensures an uninterrupted supply of air to the detector housing. Airflow monitoring detects any pipe blockages and pipe breakages in the sampling pipe.

The ASD 531 aspirating smoke detector is part of the ASD 535 product range and is available in a version for 1 sampling tube and 1 smoke sensor without smoke level indicator.

The **SSD 31** smoke sensor is used in the ASD 531. It has an alarm sensitivity range of 0.02%/m to 10%/m.

The ASD 531 aspirating smoke detector has two slots for additional modules. The following modules can be fitted:

- XLM 35 SecuriLine eXtended Module
- ML-SFD M-Line module
- RIM 36 Relay Interface Module with 5 relays
- UIM 35 universal interface module

The ASD 531 can be connected to a superordinate FACP by means of potential-free change-over contacts.

With the installation of an **XLM 35** or **ML-SFD** the ASD 531 can be ideally connected via the addressable loop to the SecuriFire and Integral fire alarm systems.

The **RIM 36** is available as a further installation option. This module enables the availability of all three pre-signal levels as well as the states of the smoke sensor and the sampling pipe.

The ASD 531 aspirating smoke detector can be used for:

- **Equipment monitoring**: EDP systems, electrical distributors, switch cabinets, etc.
- **Space monitoring**: EDP rooms, ultra-clean rooms, warehouses, hollow floors, protection of cultural assets, transformer stations, prison cells, etc.

The ASD 531 can also be deployed in areas where normally conventional point detectors are used. Local regulations and provisions must be observed from case to case.

The response behaviour of the ASD 531 has been tested in compliance with EN 54-20, Class A, B and C.

When setting up ASD 531 fire alarm systems, the information and specifications in “**Technical Description ASD 531**” must be observed and adhered to. This includes among others:

- **General** Section 1
- **Safety informations** Section 1.2.2
- **Planning** Section 4
- **Mounting** Section 5
- **Installation** Section 6
- **Commissioning** Section 7
- **Operation** Section 8

Opening the detector housing

Press the **rotary snap locks** down **firmly** with a screwdriver (at least No. 5) toward the housing base and then **turn** 90° to open them. The position of the lock slit shows the current status:

- angled approx. 45° toward detector housing corner = closed;
- angled approx. 45° toward detector housing edge = open.

In either position the rotary snap locks **must** snap into place.

Connection

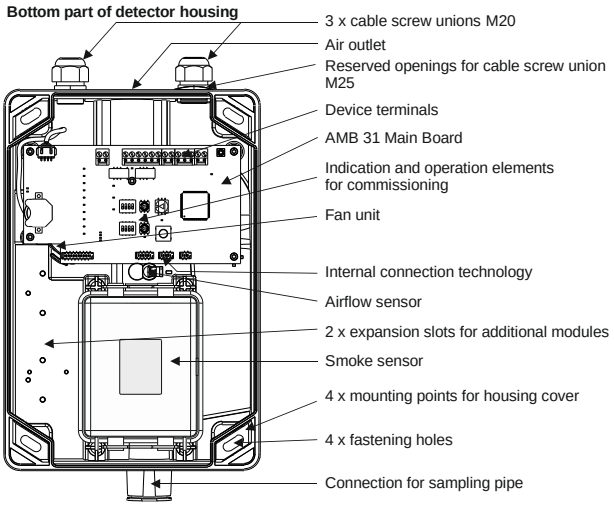
Bottom part of detector housing
3 x cable screw unions M20
Air outlet
Reserved openings for cable screw union M25
Device terminals
AMB 31 Main Board
Indication and operation elements for commissioning
Fan unit
Internal connection technology
Airflow sensor
2 x expansion slots for additional modules
Smoke sensor
4 x mounting points for housing cover
4 x fastening holes
Connection for sampling pipe

Fig. 2 Inside view of the ASD 531

Device connections on the AMB 31

The electrical connection is by means of plug-in terminals.

Terminal	Signal	
1	+14 to +30 VDC ①	Main power supply line
2	0 V	
3	+14 to +30 VDC ①	Redundant power supply line
4	0 V	
5	+ supply (for OC consumers)	
6	Output Fault, OC (all events)	
7	Output Alarm, OC	
8	Rel. 1 “(NO)”	Fault ②
9	Rel. 1 “(NC)”	
10	Rel. 1 “COM”	
11	Rel. 2 “NO”	Alarm
12	Rel. 2 “NC”	
13	Rel. 2 “COM”	
14	Input Reset external +	Opto-isolator input reset
15	Input Reset external -	

① UL/FM: +16.4 to +27 VDC
② The “Fault” relay has picked up in the normal state ➔ contact Te. 10/8 closed, 10/9 open (ASD 531 under voltage; no fault present).

Terminal assignment of the additional modules

The terminal assignments of the additional modules are shown in the corresponding data sheets (see “Article numbers and spare parts”).

Wiring principle

Examples of and information on the wiring principle can be found in the Technical Description ASD 531, T 140 416, Sec. 6.

Using the smoke sensor

The ASD 531 ships with the smoke sensor already fitted. The smoke sensor has to be removed from the detector housing for the installation of the ASD (release the two lock clamps); however it should be left inside its protective packaging until the definitive commissioning. The definitive installation is carried out as described below, see **Fig. 3**.

- Always leave the smoke sensor inside its protective packaging until it is ready to be installed definitively in the detector housing.
- Depending on the situation – (e.g. if there is a long time between mounting and commissioning or if the environment is extremely dusty (construction work) – only remove the smoke sensor from its protective packaging and insert it definitively in the detector housing when commissioning the ASD 531.
- Before installing the smoke sensor check that the insect protection screens are properly fitted to the smoke sensor chamber at the air inlet and outlet.
- The smoke sensor chamber must be absolutely free of any dirt and/or dust. Remove any residue resulting from mounting the detector housing.

Check the installation position when installing the smoke sensor. The connector plug of the smoke sensor must be face away from the slots of the additional modules. The anti-twist rib on the smoke sensor case prevents an incorrect installation position.

The smoke sensor is secured inside the ASD housing using the two lock clamps. Connect the ribbon cable supplied with the smoke sensor to the smoke sensor (large ribbon cable connector) and to the AMB 31 main board (small ribbon cable connector).

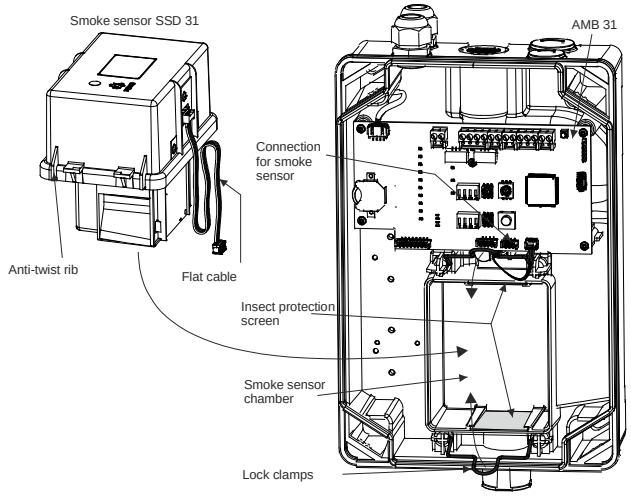

Fig. 3 Using the smoke sensor

Displays on the control unit

Several LEDs on the control unit indicate the current status of the ASD 531.

Function / state	Operation	Alarm	Fault	Det. dusty / dirty
	green	red	yellow	yellow
System Off (no voltage)				
System inactive (reset external)	On		½ T	
Smoke sensor Off (from FACP)	On		½ T	
Quiescent state	On			
Pipe blockage/breakage, delay running ①	On		1 T	
Pipe blockage/breakage, fault triggered	On		On	
Fan tacho signal missing	On		On	
Fault triggered	On		On	
Pre-signal 1	On	2 T		
Pre-signal 2	On	1 T		
Pre-signal 3	On	½ T		
Alarm	On	On		
Smoke sensor filter fault	On			2 T
Smoke sensor dusty	On			1 T
Smoke sensor dirty	On			½ T
Smoke sensor fault	On			On
Lamp test (press “Reset” 10 s)	On	1 T	1 T	1 T

① No fault triggered (triggers only after delay time has expired ➔ “Fault” continuously lit).
T = flashing display; ½ s cycle / 1 s cycle / 2 s cycle

Indicators on the AMB 31 main board

Various auxiliary LEDs are on the AMB 31 and have the following meaning:

- LED “Class” and “Holes” flash = invalid constellation of rotary switches “Class” and “Holes”;
- LED “Mode” = various functions;
- LED “WDog” = watchdog indicator;
- LED CardOk = SD memory card present;
- LED Com = communication with the SD memory card;
- LED 2 (yellow) flashing = filter replacement started;
- LED 4 (green) continuously lit = filter monitoring “On”.

Programming

The ASD 531 has several switch positions that are configured with permanently assigned parameters:

- System limits according to EN 54-20, Class A to C, without using “ASD PipeFlow”, positions ***A/1*** to ***F/C***;
- System limits for saving the settings after using “ASD PipeFlow”, positions ***1/1*** to ***3/F***.

Switch positions of rotary switch “Mode”

Pos.	Purpose
0	Initial reset
1	Operation position
2	Isolate device
3	Test trigger fault
4	Test trigger pre-signal
5	Test trigger alarm
6	Log off optional module
7	Device inactive
8	Filter monitoring On/Off, filter replacement
9	Read out / change filter service life
A – ***F***	Reserve

The table lists only the available switch positions. For information about the input procedure please refer to Technical Description T 140 416, Sec. 8.3.

System limits without ASD PipeFlow calculation

The system limits apply to the planning without using the ASD PipeFlow calculation software. There are two areas, with the following meaning:

- Detector sensitivity
  Rotary switch “Class”, switch positions ***A*** to ***F***;
  Rotary switch “Holes”, switch positions ***1*** to ***C***;
- Air flow tolerance and delay time
  DIP switch “Airflow”, switch positions ***1*** to ***4***.

Detector sensitivity

The desired alarm class according to EN 54-20 is set on the “Class” rotary switch. If accessory materials are used in the sampling pipe, positions ***A*** to ***C*** are to be used for a response grade compliant with EN 54-20. For sampling pipes without accessory material, one of the positions from ***D*** to ***F*** is to be used when selecting the response grade compliant with EN 54-20.

The rotary switch “Holes” sets the (total) number of sampling holes.

Meaning of the rotary switch positions:

- “Class” pos. ***A***, EN 54-20, Class A, with dust filter
- “Class” pos. ***B***, EN 54-20, Class B, with dust filter
- “Class” pos. ***C***, EN 54-20, Class C, with dust filter
- “Class” pos. ***D***, EN 54-20, Class A, without dust filter
- “Class” pos. ***E***, EN 54-20, Class B, without dust filter
- “Class” pos. ***F***, EN 54-20, Class C, without dust filter
- “Class” pos. ***1*** – ***C***, Number of sampling holes (***A*** = 10; ***C*** = 12)

Air flow tolerance and delay time

The air flow tolerance and delay time are set on the "Airflow" DIP switch:

Switch 1	Switch 2	Air flow tolerance
OFF	OFF	±20% ①
OFF	ON	±30%
ON	OFF	±50%
ON	ON	±10%

Switch 3	Switch 4	Delay time
OFF	OFF	300 s (5 min) ①
OFF	ON	10 min
ON	OFF	20 min
ON	ON	10 s (test position) ②

① For a normative system the setting **±20% / 300 s** is required. Other values are **not** EN tested and may be used only after consulting with the manufacturer.

② This setting may be used only for test purposes; it is not permitted in normal operation.

System limits for planning without "ASD PipeFlow" calculation

Shape	Length from ASD to the last T-piece/cross	Max. length from ASD to farthest sampling hole	Number of sampling holes per sampling branch	Max. overall length of the sampling pipe
I	---	30 m	1 – 7	30 m
U / T	1 – 10 m	30 m	1 – 6	55 m
H	1 – 10 m	20 m	1 – 3	55 m
E	1 – 10 m	20 m	1 – 4	55 m

Sampling holes for planning with "ASD PipeFlow" calculation

The tables below show the corresponding hole diameters for the numbers in **Fig. 4** depending on the number of sampling holes per sampling branch.

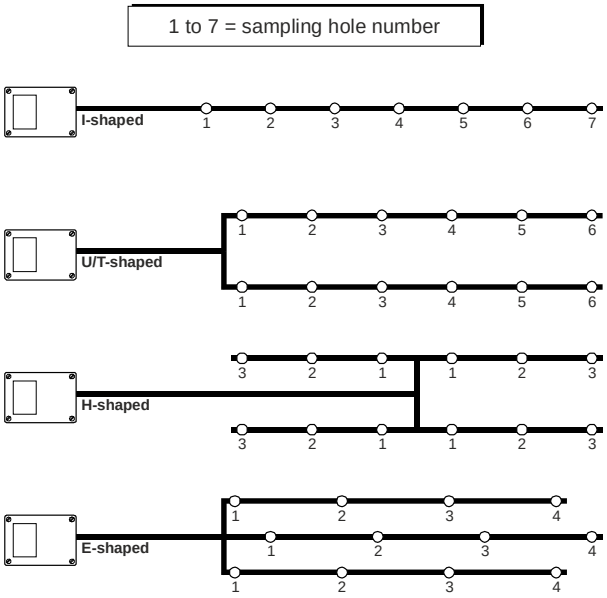

Fig. 4 Size of sampling holes

I-shaped sampling pipe							
Number per sampling branch	Ø sampling hole number from the ASD						
	1	2	3	4	5	6	7
1	7.0						
2	5.5	7.0					
3	5.0	5.5	7.0				
4	4.5	4.5	5.5	7.0			
5	4.0	4.5	5.0	5.0	6.5		
6	3.5	3.5	3.5	3.5	4.0	5.5	
7	3.5	3.5	3.5	3.5	4.0	4.0	5.5

U/T-shaped sampling pipes						
Number per sampling branch	Ø sampling hole number from the ASD					
	1	2	3	4	5	6
1	7.0					
2	5.0	6.5				
3	4.5	5.0	7.0			
4	3.5	4.0	4.0	6.5		
5	3.0	3.0	3.0	3.0	5.5	
6	3.0	3.0	3.0	3.0	3.0	5.5

H-shaped sampling pipes			
Number per sampling branch	Ø sampling hole number from the ASD		
	1	2	3
1	7.0		
2	3.5	6.5	
3	2.5	2.5	6.5

E-shaped sampling pipes				
Number per sampling branch	Ø sampling hole number from the ASD			
	1	2	3	4
1	7.0			
2	4.5	7.0		
3	3.0	3.0	6.0	
4	2.5	2.5	2.5	6.0

Relay and state latching:

Adjustable with DIP switch "Relay" no. **1** to **3**.

Signal	Switch position	Default setting	Range
• Alarm	1	On	On / Off
• Fault	2	On	On / Off
• Pre-signal	3	Off	Off / On

RIM 36 relay assignment:

The alternative relay assignment can be activated on DIP switch "Relay" no. **4**.

Relay	OFF = Default	ON = Alternative
Rel. 1	Pre-signal 1	Alarm
Rel. 2	Pre-signal 2	Alarm
Rel. 3	Pre-signal 3	Alarm or fault ①
Rel. 4	Smoke sensor: dirt / dust / fault	Alarm or fault ①
Rel. 5	Sampling pipe: pipe blockage / pipe breakage / fan fault	Fault ①

① The following faults are included here:
⇒ Smoke sensor; dust, dirt, fault
⇒ Sampling pipe; pipe blockage, pipe breakage
⇒ General; fan, initial reset, undervoltage, clock

Commissioning

When commissioning the ASD 531, it is necessary to perform an initial reset to automatically adjusting the airflow monitoring on the connected sampling pipe.

If the ASD 531 is operated without “ASD PipeFlow” calculation, the commissioning can be carried out directly using the “**BasiConfig**” **process**.

In projects in which the “ASD PipeFlow” calculation software was used, the switch settings “1/1” to “3/F” are to be applied.

Starting up

Before the ASD 531 is switched on, make sure all the precautions required for its operation have been taken (see also T 140 416, Sec. 7.1).

- Sampling pipe correctly laid and connected;
- Smoke sensor removed from protective packaging, built in and connected;
- Isolation strip on the lithium battery (AMB 31) removed.

Startup sequence and procedure:

1. Switch on supply voltage (FACP); the next procedure can be carried out while the fan is ramping up to its definitive speed (takes about 100 s). **The system is immediately armed for alarm**.
2. “**BasiConfig”**: Set the required response grade and the number of sampling holes (e.g. “***B/6***”) ➔ see “***Re-programming***”.
   - or:
   Select corresponding “**ASD PipeFlow**”: values (Technical Description ASD 531, T 140 416, Sec. 4.3.1). Set rotary switch.
3. Following a **minimum waiting time of 2 min** after switching on, an initial reset must be performed (possible only via AMB 31) ➔ see “***Initial reset***”.
4. The ASD 531 is now ready for operation.

Re-programming

Example: Response grade B, sampling holes 6, airflow tolerance / delay time ±30% / 600 s ①.

Measure	Indicator ②	Procedure Remark
1. Turn rotary switch “Class” to position “***B***”	--	Set response grade B
2. Turn rotary switch “Holes” to position “***6***”	--	Set 6 sampling holes
3. Set DIP switch “Airflow”: Positions “***1***” and “***3***” on “***OFF***”; Positions “***2***” and “***4***” on “***ON***”;	--	Set airflow tolerance / delay time ±30% / 600 s ①

① For normative systems the setting ***±20%*** / ***300 s*** is required. Other values are **not** EN tested and may be used only after consulting with the manufacturer.

② The “Class” and “Holes” LEDs begin to flash after a delay time when there is an invalid entry (e.g. Class A with 10 sampling holes).

Initial reset

Measure	Indicator	Procedure Remark
Before performing an initial reset after switching on the ASD 531, a **waiting time of at least 2 min** must be observed.		
1. Turn rotary switch “Mode” to position “***0***”	--	• Switch position initial reset
2. Press key “Set/Res”	--	• Initial reset in progress
3. Wait	Both middle LEDs of the air flow indicator are lit	• Initial reset completed
4. Turn rotary switch “Mode” to position “***1***”	--	• Operation switch position
5. Press key “Set/Res”	--	• Operating mode running

Filter replacement

When filter monitoring is activated and after expiry of the configured filter service life, a “Filter fault (service life exceeded)” fault is triggered. To remedy, the filter element in a dust filter unit must be replaced.

For an activated filter replacement the ASD is set to the “**isolate**” state. This insures that during the replacement work falling dust particles from the filter element do not cause a false alarm.

When the ASD 531 housing is closed, the “Start filter replacement” function can be activated by means of the **“Reset” key** (provided the filter monitoring is activated). To do so, press the key **longer than 15 s** (attention: lamp test after 10 s). After 15 s the filter replacement is started and indicated by switching to the “Isolate” state (LED “Fault”).

After the filter has been replaced, the “Filter replacement” procedure is completed by pressing the **“Reset” key** on the ASD. This cancels the “Isolate” state and resets the fault on the ASD. “Filter service life” monitoring is restarted at 0.

The filter replacement can also be started via *BasiConfig* rotary switch “Mode”, position ***8***. For information, please refer to Technical Description T 140 416, Section 7.8.

Measurements / Commissioning protocol

Carry out the following measurements:

- Measure voltage at terminals 1 (+), 2 (-) (also terminals 3 and 4 if redundant supply) ➔ target value = 17.6 to 27.6 VDC
- Airflow value based on the LED bar (see Technical Description, T 140 416, Sec. 7.6.1).

The commissioning protocol is like a personal history of the ASD 531 and should therefore be filled out conscientiously and completely and stored in the ASD 531. If required, a copy can be made and stored in the system dossier.

Checking fault and alarm release

Test	Procedure	Action
		Block or switch off fire incident control and remote alerting on the superordinate FACP.
Check airflow monitoring	Tape over the sampling holes (adhesive tape); the number depends on the pipe configuration.	• As soon as the resulting change in the airflow is exceeded by ±20%, the "Fault" LED begins to flash. • Once the LS-Ü delay (300 s) has elapsed, the ASD triggers a fault ➔ fault on FACP ①.
Check alarm release	Impose smoke at the maintenance sampling hole or sampling hole.	• ASD triggers an alarm ➔ alarm on FACP; check for correct alarm transmission (zone/range release) on the FACP①. • Any pre-signals will also release.

① Reset the ASD 531 between each check (please note: resetting the ASD does not reset the FACP).

Article numbers and spare parts

Short designation		Article number
Aspirating Smoke Detector ASD 531		11-2000002-01-XX
Replacement smoke sensor SSD 31		11-2200009-01-XX
SecuriLine eXtended Module XLM 35		11-2200003-01-XX
M-Line module ML-SFD		11-2200015-01-XX
RIM 36 Relay Interface Module		11-2200005-01-XX
SD memory card (industrial version)		11-4000007-01-XX
AMB 31 Main Board		11-2200012-01-XX
Aspirating Fan Unit AFU 32, complete		11-2200008-01-XX
Air Flow Sensor AFS 32		11-2200007-01-XX
Insect Protection Screen IPS 35 (set of 2)		11-2300012-01-XX
Lithium battery		11-4000002-01-XX
Cable screw union	M20 (set of 10)	11-4000003-01-XX
	M25 (set of 10)	11-4000004-01-XX
Adapter US cable screw union AD US M-Inch		11-2300029-01-XX
UMS 35 Universal Module Support		4301252.0101
Technical description ASD 531		T 140 416
Material for the sampling pipe		T 131 194
Commissioning protocol		T 140 418
Data sheets	XLM 35	T 140 088
	ML-SFD	T 140 822
	RIM 36	T 140 364
AFU 32 installation instructions		T 140 426

Declaration of performance
www.securiton.ch/declaration-of-performance

Dimensioned drawing

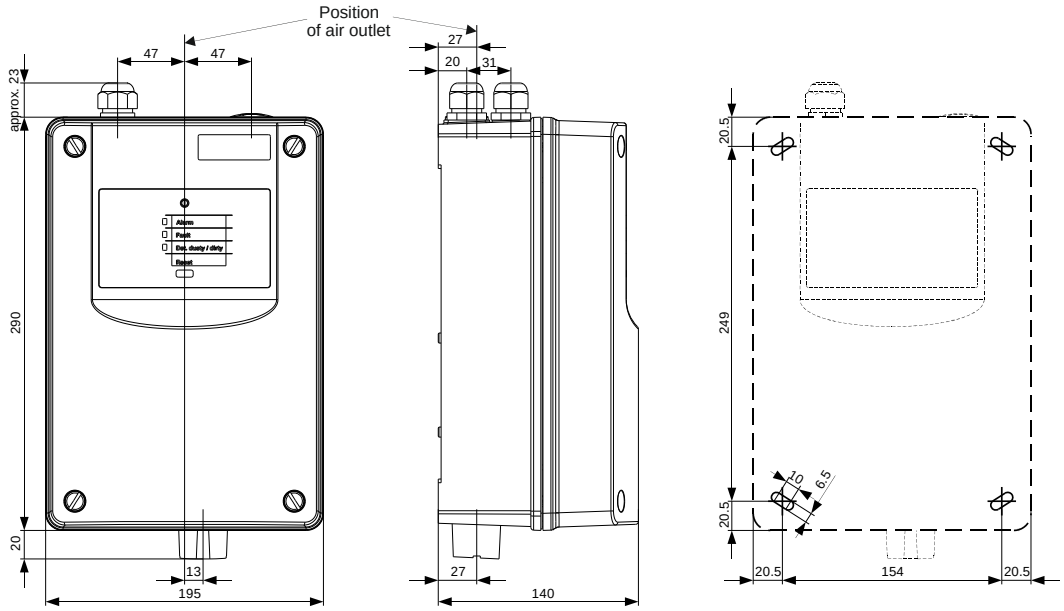

Fig. 5 Detector housing dimensioned drawing

Technical data

Type			ASD 531	
Supply voltage range			14 to 30 (**UL/FM = 16.4 to 27**)	VDC
Maximum power consumption,			typical	
measured at ➔		14 VDC ①	24 VDC	
ASD 531	quiescent / fault	approx. 110	approx. 75	mA
	alarm	approx. 120	approx. 80	mA
additionally with RIM 36 (all relays triggered)		approx. 30	approx. 15	mA
additionally with XLM 35 / ML-SFD		approx. 15	approx. 5	mA
Switch-on current peak ② (caused by EMC protection elements on the ASD supply input)			approx. 5 A for max. 1 ms	
Sampling pipe length			see T 140 416, Sec. 4.2.1	
Sampling pipe diameter, typical (inner/outer)			Ø 20 / 25	mm
Max. number of sampling holes			see T 140 416, Sec. 4.2.1	
Sampling hole diameter		Ø 2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5 / 5.5 / 6 / 6.5 / 7		mm
Response range			EN 54-20, Class A, B, C	
Protection type compliant with IEC 60529 / EN 60529			54	IP
Ambient conditions compliant with IEC 60721-3-3 / EN 60721-3-3			3K5 / 3Z1	class
Extended ambient conditions:				
• Detector housing temperature range			–10 – +55 (**UL max. +40**)	°C
• Sampling pipe temperature range			–10 – +55 ③	°C
• max. permissible temperature fluctuation in detector housing and sampling pipe operation			20 ③	°C
• max. permissible storage temperature for detector housing (without condensation)			–20 – +70	°C
• Ambient pressure difference between detector housing and sampling pipe (sampling holes)			must be identical	
• Humidity ambient condition for detector housing (transient without condensation)			95 ③	% rel. h
• Humidity ambient condition (continuous)			70 ③	% rel. h
Max. loading capacity, relay contact			50 (**UL max. 30**)	VDC
			1	A
			30	W
Max. loading capacity per OC output (dielectric strength 30 VDC)			100	mA
Plug-in terminals			2.5	mm²
Cable entry for cable Ø			Ø 5 – 12 (M20) / Ø 9 – 18 (M25)	mm
Sound pressure level			25	dB (A) / 1 m
Housing	material		ABS blend, UL 94-V0	
	colour		grey 280 70 05 / anthracite violet 300 20 05	RAL
Approvals			EN 54-20 / FM 3230–3250 / ULC-S529 3rd Ed	
VdS approval			G 215100	
ASD 531 dimensions (W x H x D)			195 x 333 x 140	mm
Weight ASD 531			1,950	g

① Power consumption at maximum permitted voltage drop in the electrical installation (decisive value for calculating the conductor cross-section).

② May cause the protective circuit to trigger immediately in the case of power supplies with overload protective circuits (primarily in devices with no emergency power supply and output current of < 1.5 A).

③ Lower or higher temperature ranges are also possible subject to consultation with the manufacturer. The manufacturer must be consulted if the device is used in the condensation range.

Changes to Index “d” on pages: 1, 2, 5, 6, 7

First edition: 15.10.2015 Bmi/Ksa
The product specifications contained in this document are subject to change without prior notice.
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ASD dust filter unit DFU 911 and DFU 911S

A dust filter unit DFU 911 can be installed in the sampling pipe tube network for using an aspirating smoke detector (ASD) in applications subject to dust or dirt. This significantly extends the service life of the smoke sensors, air flow sensors and fans used in the ASD and results in enhanced resistance to false alarms. A filter monitoring function in the ASD can be activated to indicate the optimal time to replace the filter element after a defined, application-specific filter service life has elapsed.

Quick and simple installation
The dust filter unit is mounted directly on the wall. The distance from the wall to the connecting pipes of the filter is defined using the ASD and the wall mounting clips.

Long service life
Proven technology in a compact design – the new dust filter unit DFU 911 incorporates the proven filter technology of the DFU 535 filter family, but with a simplified design. The incredibly effective lamella filter technology guarantees good air distribution across the entire surface of the filter in the DFU 911 dust filter unit.

A perfect match for all Securiton ASD types
The size of the new DFU 911 dust filter unit means it is optimally designed for use with the Securiton ASDs. Two filter units fit perfectly with the contact spacing of a two-channel ASD 535. With the simple housing colour in the style of Securiton devices, its affiliation with the device family is immediately apparent.

Tool-free maintenance in three simple steps
Tools are not required for maintenance of the DFU 911 dust filter unit. The simple design allows for maintenance to be carried out rapidly.

DFU 911S
The new DFU 911S dust filter unit is equipped with a special protective flap. Additional monitoring is made as to whether a filter cartridge is inserted or not. If the filter cartridge is missing, an air flow fault is triggered on the ASD. This is a fast and effective way of determining whether the filter cartridge was deliberately removed or accidentally not inserted. While the filter cartridge is being replaced, the flap also prevents dirt from entering the sampling pipe.

Instructions for replacing the filter cartridge
Nothing could be quicker and easier!

1 Open the two metal clips

2 Remove the housing cover

3 Replace the RFC 911 filter element

The filter can be put back into operation after attaching the housing cover and closing the metal clips.

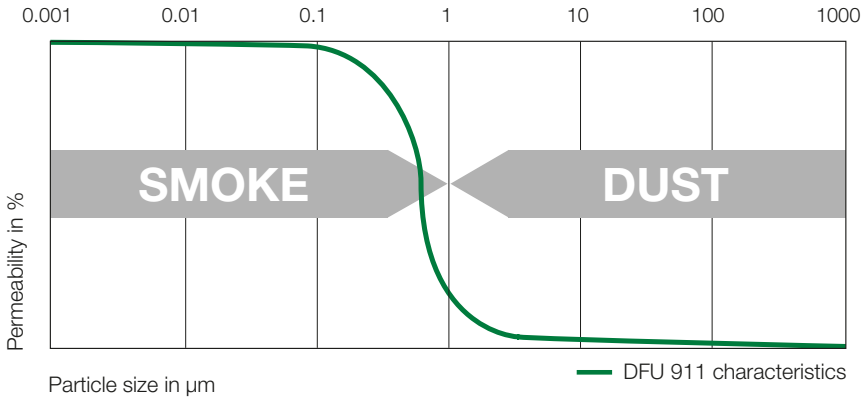
Standard DFU 911 dust filter unit

DFU 911S dust filter unit with integrated protective flap

SECURITON

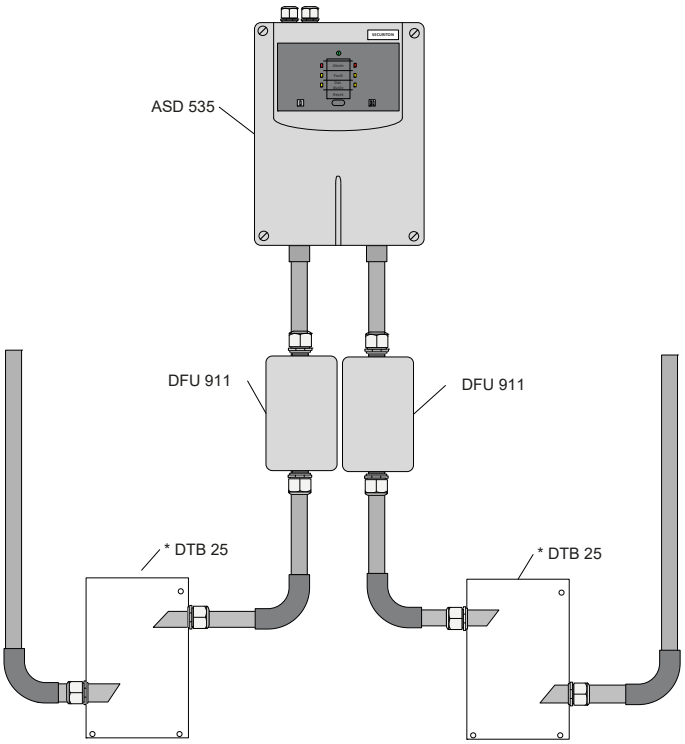
ASD dust filter unit
DFU 911 and DFU 911S

Functions
The DFU 911 dust filter unit uses a filter material that has been specially developed for use in aspirating smoke detectors. One of the features of this filter material is that it filters out dust particles while allowing smoke particles to pass through unfiltered. Typically, in terms of particle size the dividing line where dust and smoke particles meet is around 1 µm. The graphic shows the filter characteristics of the DFU 911 dust filter unit.



Typical areas of application
DFU 911: Warehouses, hollow ceilings, hollow floors, public buildings, cable tunnels, power supply tunnels, switch cabinets, transformers, wind turbines etc.

DFU 911S:
Installations where monitoring the presence of a filter cartridge is required, such as agricultural applications, production companies, recycling plants, timber processing plants etc.



*The DTB 25 dust trap box is intended for use in heavily contaminated areas.

Technical data

DFU 911
Dust filter unit
Article no. 11-2300030-01-xx

DFU 911S
Monitored dust filter unit (with protective flap)
Article no. 11-2300103-01-xx

RFC 911
RFC 911 replacement filter element
Article no. 11-2300031-01-xx

RFC 911VE20
RFC 911 replacement filter element (20 pcs.)
Article no. 11-2300031-02-xx

818277 05.20

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A company of the Swiss Securitas Group

SECURITON

Certificate of Compliance

Certificate Number:
S25264

Report Reference:
S25264-20140205

Issue Date:
2024-04-18

Issued to:

SECURITON AG
Alpenstrasse 20
Zollikofen Bern 3052 Switzerland

This certificate confirms that representative samples of:

SMOKE DETECTORS FOR SPECIAL APPLICATIONS

See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.

ANSI/UL 268, Smoke Detectors for Fire Alarm Systems

ULC-S529, Smoke Detectors for Fire Alarm Systems

ANSI/UL 268A, Smoke Detectors for Duct Application

Additional Information:
See UL Product iQ® at https://iq.ulprospector.com for additional information.

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

David Piecuch
UL Mark Certification Program Manager

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact UL Solutions Customer Service at https://www.ul.com/contact-us.

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CERTIFICATE OF COMPLIANCE

Certificate number	S25264
Report reference	S25264-20140205
Date	2024-04-18

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

USL, CNL - Smoke-automatic fire detector, air sampling type, Models ASD 533-1, ASD 533-2, ASD 535-1, ASD 535-1 China, ASD 535-2, ASD 535-2 China, ASD 535-3, ASD 535-3HD, ASD 535-4, ASD 535-4HD, ASD 535A-3CN, ASD 535A-3HD CN, ASD 535A-4CN, and ASD 535A-4HD CN.

David Piecuch
UL Mark Certification Program Manager

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CERTIFICATE OF CONFORMITY

1. **FIRE PROTECTION EQUIPMENT**
2. **Certificate No:** **FM23FPUS0021**
3. **Equipment:** **ASD 535 Aspirating Smoke Detector**
   (Type Reference and Name)
4. **Name of Listing Company:** **SECURITON AG**
5. **Address of Listing Company:** **Alpenstrasse 20, CH-3052 Zollikofen, Switzerland**
6. The examination and test results are recorded in confidential report number:

   3035294 dated 13th November 2009

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

   FM 3230:2023

8. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
9. Approval Guide Listing Category:

   Alarm Signal Initiating Devices, Smoke Detectors
   Alarm Signal Initiating Devices, Smoke Detectors, Very Early Warning Fire Detection (VEWFD) Systems
   Alarm Signal Initiating Devices, Smoke Detectors, Protection of Refrigerated Spaces

Certificate issued by:

J.E. Marquedant

17 May 2023

J.E. Marquedant
VP, Manager - Electrical Systems

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

10. **Description of Equipment:**

Aspirating Type Smoke Detector:

ASD 535-1, ASD 535-2, ASD 535-3, ASD 535-4, ASD 535-3 HD, ASD 535-4 HD, ASD 535-1 China, ASD 535-2 China, ASD 535-3 China, ASD 535-4 China, ASD 535A-3CN, ASD 535A-4CN, ASD 535A-3HD CN, ASD 535A-4HD CN

Smoke detection technology	Scattered light obscuration
Sensitivity range	· SSD 535-1 sensitivity corresponds to 0.15%/ft (0.5%/m),
	· SSD 535-2 sensitivity corresponds to 0.03%/ft (0.1%/m)
	· SSD 535-3 sensitivity corresponds to 0.006%/ft (0.02%/m).
	All options can be set to a lowest sensitivity of 3.15%/ft (10%/m).
	The sensitivity range can be extended up to 0.002%/m via the pre-signals.
Firmware	Version 01.10.xx
Sampling pipe	Nominal 20mm I.D., 25mm O.D.
Pipe length – pipe network	Single pipe or double pipe, H shape, 240 m max. 3-5 holes per branch, transport time cannot exceed 120s on FM Approved systems
Alarm Levels	5 (Alarm, pre-signal 1, 2, 3, Alarm 2)
Special Features	For use with compatible Approved fire alarm controls providing separate circuits for power and the standard relay contacts on the terminal board of the detector or the analogue connection via a SLM 35/XLM 35 interface to an Approved, compatible panel.
Displays and Controls	Displays: Several LEDs on the control unit indicate the current state of the
	ASD 535. Operating, Alarm, Fault, Detector dusty/dirty, smoke levels 1-10 (ASD 535-3 / ASD 535-4 ASD 535-3 HD, ASD 535-4 HD, ASD 535-3 China, ASD 535-4 China, ASD 535A-3CN, ASD 535A-4CN, ASD 535A-3HD CN, ASD 535A-4HD CN only).
Relay Outputs	Criteria can be programmed on a max. of 11 relays (1 AMB 35
	unit on ASD 535-1 and -3, 5 units on 1st RIM 35, 5 units on 2nd RIM 35)
Accessories	Sampling pipe design software, ASD PipeFlow Version 2.8.0
	Usable expansion modules (max. 4 units)

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FMApprovals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

Accessories	· XLM 35, SLM 35, RIM 35 (2 x), MCM 35, SIM 35
	In exposed areas with atmospheric overvoltage risk, the Overvoltage Protection Board OPB 911 CP can be built into the ASD 535.
	The ASD 535 can be linked to a higher level FACP by means of potential-free change-over contacts.
	With the XLM 35 or SLM 35, the ASD 535 can be ideally connected to the SecuriFire and Integral fire alarm systems (with SLM also to SecuriPro).
	The RIM 35 enables the availability of all three pre-signal levels as well as the states “smoke sensor dirty” and “LS-Ü blockage” as relay contacts. The relays are freely configurable (via “ASD Config”).
	The MCM 35 serves to record operating data.
	Up to 250 ASDs can be networked with the SIM 35; they can then be visualised and operated using “ASD Config”.
Communication protocols	None available, requires listed panel
	A line card is used for communication between the aspirating smoke
	detector and a fire alarm control panel via an addressable loop
Coverage	FM Data sheets, local codes and standards for aspirating smoke detectors, Area of coverage per sampling hole is usually at least the same as a spot or point detector
Operating voltage range	12.4-27 VDC, 24 VDC nominal
Operating temperature range	-22°F (-30°C) to 120°F (49°C), ambient
Sampling air temperature range	0°C to 37.8°C (32°F to 100°F) tested
Humidity range	0 to 95% RH, non-condensing
Power consumption	260 - 820mA
Enclosure	Plastic (PC/ABS) Indoor use only
Model codes	· ASD 535-1; for 1 sampling tube, and 1 smoke sensor without smoke level indicator
	· ASD 535-2; for 2 sampling tubes, and 2 smoke sensors without smoke level indicator
	· ASD 535-3; for 1 sampling tube, and 1 smoke sensor with smoke level indicator

Model codes	· ASD 535-4; for 2 sampling tubes, and 2 smoke sensors with smoke level indicator
	· ASD 535-3 HD; like ASD 535-3, with increased IP protection and painted printed circuit boards
	· ASD 535-4 HD; like ASD 535-4, with increased IP protection and painted printed circuit boards
	· ASD 535-1 China; like ASD 535-1 with labeling in Chinese language
	· ASD 535-2 China; like ASD 535-2 with labeling in Chinese language
	· ASD 535-3 China; like ASD 535-3 with labeling in Chinese language
	· ASD 535-4 China; like ASD 535-4 with labeling in Chinese language
	· ASD 535A-3CN; like ASD 535-3 with labeling in Chinese language
	· ASD 535A-4CN; like ASD 535-4 with labeling in Chinese language
	· ASD 535A-3HD CN; like ASD 535A-3CN, with increased IP protection and painted printed circuit boards
	· ASD 535A-4HD CN; like ASD 535A-4CN, with increased IP protection and painted printed circuit boards
Compatible fire alarm control panels (FACPs) and power sources	The detector is to be used with Approved control panels providing separate circuits for power and alarm initiating devices. Power to the detector (both primary and standby) can also be provided by an independent FM Approved power source. The required 24Vdc primary power and 24-hour standby power for detector must be obtained locally from a means suitable for NFPA 72 applications and is to be installed in the same room as the detector with the wiring in conduit and not exceeding 6 m.

11. **Test and Assessment Procedure and Conditions:**

    This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

12. **Schedule Drawings**

    A copy of the technical documentation has been kept by FM Approvals.

13. **Certificate History**

    Details of the supplements to this certificate are described below:

Date	Description
17 May 2023	Original Issue. Reference 3035294CoC/PR455912CoC

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FMApprovals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

Anerkennung
Approval

von Bauteilen und Systemen
of Components and Systems

Inhaber der Anerkennung / Holder of the Approval

Securiton AG
Alpenstrasse 20
CH-3052 ZOLLIKOFEN

Anerkennungs-Nr. / Approval No.	Anzahl der Seiten / No. of pages	gültig vom (TT.MM.JJJJ) / valid from (dd.mm.yyyy)	gültig bis (TT.MM.JJJJ) / valid until (dd.mm.yyyy)
G 208154	18	06.01.2023	05.01.2027

Gegenstand der Anerkennung / Subject of the Approval

Ansaugrauchmelder /
Aspirating smoke detector
ASD 535-x

Verwendung / Use

in automatischen Brandmeldeanlagen /
in automatic fire detection and fire alarm systems

Anerkennungsgrundlagen / Basis of the Approval

VdS 2344:2014-07
VdS 2543:2021-03
VdS 3416:2017-12
EN 54-17:2005 + AC:2007
EN 54-20:2006 + AC:2008
EN 54-27:2015-05

Köln, den 06.01.2023

Dr. Reinermann
Geschäftsführer /
Managing Director

i. V. Hesels
Leiter der Zertifizierungsstelle /
Head of Certification Body

Die Anerkennung umfasst nur das angegebene Bauteil/System in der zur Prüfung eingereichten Ausführung

- mit den Bestandteilen nach Anlage 1,
- dokumentiert in den technischen Unterlagen nach Anlage 2,
- zur Verwendung in den angegebenen Einrichtungen der Brandschutz-und Sicherungstechnik.

Bei der Anwendung des Gegenstandes der Anerkennung sind die Hinweise nach Anlage 3 zu beachten.

Das Zertifikat darf nur unverändert und mit sämtlichen Anlagen vervielfältigt werden. Alle Änderungen der Voraussetzungen für die Anerkennung sind der VdS-Zertifizierungsstelle – mitsamt den erforderlichen Unterlagen – unverzüglich zu übermitteln.

This Approval is valid only for the specified component/system as submitted for testing

- together with the parts listed in enclosure 1
- documented in the technical documents according to enclosure 2
- for the use in the specified fire protection and security installations.

When using the subject of the approval the notes of enclosure 3 shall be observed.

This certificate may only be reproduced in its present form without any modifications including all enclosures. All changes of the underlying conditions of this approval shall be reported at once to the VdS certification body including the required documentation.

VdS Schadenverhütung GmbH
Amsterdamer Str. 174
D-50735 Köln

Ein Unternehmen des Gesamtverbandes der Deutschen Versicherungswirtschaft e.V. (GDV), durch die DAkkS akkreditiert als Zertifizierungsstelle für Produkte in den Bereichen Brandschutz und Sicherungstechnik

A company of the German Insurance Association (GDV) accredited by DAkkS as certification body for fire protection and security products

DAkkS Deutsche Akkreditierungsstelle D-ZE-11149-01-01

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Der Gegenstand der Anerkennung umfasst folgende Bestandteile.
The subject of the approval comprises the following parts.

Bezeichnung des Gegenstandes Description of Subject	Typ Type	Kenn-Nr. des Inhabers Holder's Registration No.	Anerkennungsnr Approval No.
Ansaugrauchmelder / **Aspirating Smoke Detector** **bestehend aus /** **consisting of**	ASD 535		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-1		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-2		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-3		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-4		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-3 HD		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-4 HD		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-1 SE		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-2 SE		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-3 SE		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-4 SE		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-1 China		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-2 China		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-3 China		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535-4 China		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535A-3CN		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535A-4CN		

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Der Gegenstand der Anerkennung umfasst folgende Bestandteile.
The subject of the approval comprises the following parts.

Bezeichnung des Gegenstandes Description of Subject	Typ Type	Kenn-Nr. des Inhabers Holder's Registration No.	Anerkennungsnr Approval No.
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535A-3HD CN		
Ansaugrauchmelder / Aspirating Smoke Detector	ASD 535A-4HD CN		
Optische Rauchsensoren / Optical Smoke Sensors			
0,5 – 10 %/m	SSD 535-1		
0,1 – 10 %/m	SSD 535-2		
0,02 – 10 %/m	SSD 535-3		
0,5 – 10 %/m	SSD 535-1 CP		
0,1 – 10 %/m	SSD 535-2 CP		
0,02 – 10 %/m	SSD 535-3 CP		
0,02 - 10 %/m	SSD 535-3 SE		
SecuriLine Modul / SecuriLine Module	SLM 35		
SecuriLine extended Modul / SecuriLine extended Modul	XLM 35		G222031
Relais Interface Modul / Relay Interface Module	RIM 35		
Memory Card Modul / Memory Card Module	MCM 35		
Serielles Schnittstellen Modul / Serial Interface Module	SIM 35		
Überspannungsschutz / Overvoltage protection	OPB 911 CP		
Zubehörteile für die Ansaugleitung / Accessories for Aspirating Pipe			
Filterkasten klein / Filter Box small	FBS 25 PC		
Filterkasten groß / Filter Box large	FBL 25 PC		

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Der Gegenstand der Anerkennung umfasst folgende Bestandteile.
The subject of the approval comprises the following parts.

Bezeichnung des Gegenstandes Description of Subject	Typ Type	Kenn-Nr. des Inhabers Holder's Registration No.	Anerkennungsnr Approval No.
Filterkasten extra groß / Filter Box extra large	FBX 25		
Staub-Filtereinheit / Dust Filter Unit	DFU 911		
Staub-Filtereinheit / Dust Filter Unit	DFU 911S		
Staub-Filtereinheit / Dust Filter Unit	DFU 911 SE		
Ersatz-Filterelement / Spare Filter Uni	RFC 911		
Staub-Filtereinheit groß / Dust Filter Unit large	DFU 535L		
Staub-Filtereinheit extra groß / Dust Filter Unit extra large	DFU 535XL		
Staubfalle / Dust Trap	DTB 25		
Staubabscheider (Zyklonprinzip) / Dust Separator (Cyclone Principle)	DRB 25 PVC		
Wasserabscheider Standard / Water Separator Standard			
PVC/PC	WRB 25 PVC		
ABS/PC	WRB 25 ABS		
Magnetfilter-System / Magnetic Filter System	MFS 25		
Manuelle Kugelhähne / Manual Ball Valves			
PVC	MV 25 PVC		
ABS	MV 25 ABS		
Stahl, PVC	MV 25 St PVC		
Stahl ABS	MV 25 St ABS		
90° PVC	MV 25-90 PVC		

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Der Gegenstand der Anerkennung umfasst folgende Bestandteile.
The subject of the approval comprises the following parts.

Bezeichnung des Gegenstandes Description of Subject	Typ Type	Kenn-Nr. des Inhabers Holder's Registration No.	Anerkennungsnr Approval No.
Detonationssicherung / Detonation Protection	DFA 22		
Automatische Ausblasvor-richtungen / **Automatic Exhaust Equipments**			
	ADB 01A		
	ADB 02		
	ADB 1000		
	ADB 2000		
Melderbox / **Detector Box**	REK 511		
Rauchmelder zu REK 511 / **Smoke Detector to REK 511**			
1,2 %/m	SSD 515-1S		
0,6 %/m	SSD 515-2S		
0,3 %/m	SSD 515-3S		
Kabelanschluss-Einheit / Cable Connection Unit	WCU 535		
Ansaugstelle mit Heizung / Aspirating Point with Heater	Heat xx PVC		
Ansaugstelle mit Heizung / Aspirating Point with Heater	Heat xx ABS		
Kabelverbindung-Fitting / Cable Connection Fitting	CCF 25 PVC		
Kabelverbindung-Fitting / Cable Connection Fitting	CCF 25 ABS		
Koppler / **Coupler**			
Bosch	FLM-420-RHV-D		G207053
Siemens	FDCIO222		G204029
Siemens	FDCIO224		G207001

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum/ Revision Date/ Revision	Seiten Pages
Prüfberichte / Test Reports			
	210137-AU03+SPB03-PB01	11.11.2022	
	210137-AU01+SPB06-PB01	11.11.2022	
	210137-AU01+SPB08-PB01	11.11.2022	
	210137-AU01+SW01-PB01	04.08.2022	
	180279-AU01+SPB07-PB01	18.07.2022	
	210137-AU01+UCE02-PB01	02.06.2022	
	210137-AU01+UCE01-PB01	17.05.2022	
	180279-AU01+SPB06-PB01	04.03.2022	
	182553-AU01+SPB04-PB01	09.03.2020	
	180279-AU01+SW01-PB01	27.01.2020	
	180279-AU01+UCE01-PB01	15.01.2020	
	180279-AU01+UCE02-PB01	08.01.2020	
	182553-AU01+UCE01-PB01	05.11.2019	
	170968-AU01+SPB02-PB01	08.06.2018	
	161317-AU04+SW01-PB01	07.08.2017	
	160624-AU01+SPB02	15.02.2017	
	151430-AU01+SPB08-PB01	17.12.2015	
	151430-AU01+UCE01-PB01	30.10.2015	
	BMA 14122	17.11.2014	
	BMA 12109	20.02.2013	
	101388-AU01+SW01	20.02.2013	
	BMA 11025	08.04.2011	
	BMA 09190	18.12.2009	
	BMA 08119	03.10.2008	
	SW-2007201	25.09.2008	
Technische Dokumentation / Technical Documentation			
Technische Beschreibung / Technical Description	T 131 192 / k	13.12.2021	143
Datenblatt / Data Sheet	T 131 193 / k	13.12.2021	10
Material für die Ansaugleitung / Material for Aspirating Pipe	T 131 194 / k	13.12.2021	22

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Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum/ Revision Date/ Revision	Seiten Pages
Inbetriebnahmeprotokoll / Commissioning Record	T 131 199 / a	06.03.2009	2
AFU Ansaug-Lüftereinheit / AFU Aspirating Fan Unit	T 131 200 / b	03.02.2012	1
Anwendungsrichtlinie für Tiefkühllager / Application Guideline for Frozen Storages	T 131 390 / g	13.12.2021	32
Geräteausführung / Device variants			
Disposition ASD 535-1 / Disposition ASD 535-1	11-2000015-01-02	01.04.2021	1
Stückliste ASD 535-1 / Parts list ASD 535-1	11-2000015-01-02	131221	2
Disposition ASD 535-2 / Disposition ASD 535-2	11-2000016-01-02	01.04.2021	1
Stückliste ASD 535-2 / Parts list ASD 535-2	11-2000016-01-02	131221	2
Disposition ASD 535-3 / Disposition ASD 535-3	11-2000017-01-02	01.04.2021	1
Stückliste ASD 535-3 / Parts list ASD 535-3	11-2000017-01-02	131221	2
Disposition ASD 535-4 / Disposition ASD 535-4	11-2000018-01-02	01.04.2021	1
Stückliste ASD 535-4 / Parts List ASD 535-4	11-2000018-01-02	131221	2
Disposition ASD 535-1 SE / Disposition ASD 535-1 SE	11-2000019-26-02	01.04.2021	1
Stückliste ASD 535-1 SE / Parts list ASD 535-1 SE	11-2000019-26-02	131221	2
Disposition ASD 535-2 SE / Disposition ASD 535-2 SE	11-2000020-26-02	01.04.2021	1
Stückliste ASD 535-2 SE / Parts list ASD 535-2 SE	11-2000020-26-02	131221	2

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Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum/ Revision Date/ Revision	Seiten Pages
Disposition ASD 535-3 SE / Disposition ASD 535-3 SE	11-2000021-26-02	01.04.2021	1
Stückliste ASD 535-3 SE / Parts list ASD 535-3 SE	11-2000021-26-02	131221	2
Disposition ASD 535-4 SE / Disposition ASD 535-4 SE	11-2000022-26-02	01.04.2021	1
Stückliste ASD 535-4 SE / Parts list ASD 535-4 SE	11-2000022-26-02	131221	2
Disposition ASD 535-1 China / Disposition ASD 535-1 China	11-2000051-23-02	01.07.2022	1
Stückliste ASD 535-1 China / Parts list ASD 535-1 China	11-2000051-23-02	010722	3
Disposition ASD 535-2 China / Disposition ASD 535-2 China	11-2000052-23-02	01.07.2022	1
Stückliste ASD 535-2 China / Parts list ASD 535-2 China	11-2000052-23-02	010722	3
Disposition ASD 535-3 China / Disposition ASD 535-3 China	5000623.2303	30.04.2018	1
Stückliste ASD 535-3 China / Parts list ASD 535-3 China	5000623.2303	30.04.2018	3
Disposition ASD 535A-3CN / Disposition ASD 535A-3CN	11-2000042-23-02	01.07.2022	1
Stückliste ASD 535A-3CN / Parts list ASD 535A-3CN	11-2000042-23-02	010722	5
Disposition ASD 535-4 China / Disposition ASD 535-4 China	5000623.2304	30.04.2018	1
Stückliste ASD 535-4 China / Parts list ASD 535-4 China	5000623.2304	30.04.2018	3
Disposition ASD 535A-4CN / Disposition ASD 535A-4CN	11-2000044-23-02	01.07.2022	1
Stückliste ASD 535A-4CN / Parts list ASD 535A-4CN	11-2000044-23-02	010722	4
Disposition ASD 535-3 HD / Disposition ASD 535-3 HD	11-2000036-01-02	01.04.2021	1
Stückliste ASD 535-3 HD / Parts list ASD 535-3 HD	11-2000036-01-02	131221	2

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum/ Revision Date/ Revision	Seiten Pages
Disposition ASD 535-4 HD / Disposition ASD 535-4 HD	11-2000037-01-02	01.04.2021	1
Stückliste ASD 535-4 HD / Parts list ASD 535-4 HD	11-2000037-01-02	131221	2
Disposition ASD 535A-3HD CN / Disposition ASD 535A-3HD CN	11-2000041-23-02	01.07.2022	1
Stückliste ASD 535A-3HD CN / Parts list ASD 535A-3HD CN	11-2000041-23-02	010722	5
Disposition ASD 535A-4HD CN / Disposition ASD 535A-4HD CN	11-2000043-23-02	01.07.2022	1
Stückliste ASD 535A-4HD CN / Parts list ASD 535A-4HD CN	11-2000043-23-02	010722	5
Bedieneinheit BCB 35 / Control unit BCB 35			
Stückliste BCB 35 / Parts list BCB 35	4301167	13.12.2010	2
Stromlaufplan BCB 35 / Circuit diagram BCB 35	4301167	12.07.2010	1
Bestückungsplan BCB 35 / Assembly diagram BCB 35	4301167	26.03.2014	2
Hauptplatine AMB 35 / Main Board AMB 35			
Stückliste AMB 35 / Parts list AMB 35	4000873-04	131221	5
Stromlaufplan AMB 35 / Circuit diagram AMB 35	4000873-04	13.12.2021	4
Bestückungsplan AMB 35 / Assembly diagram AMB 35	4000873-04	20.12.2021	3
Stückliste AMB 35 CP / Parts list AMB 35 CP	4000990-02	131221	5

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Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum/ Revision Date/ Revision	Seiten Pages
Bedieneinheit ACB 35 / Control unit ACB 35			
Stückliste ACB 35 / Parts list ACB 35	4301168	13.12.2010	2
Stromlaufplan ACB 35 / Circuit diagram ACB 35	4301168	12.07.2010	1
Bestückungsplan ACB 35 / Assembly diagram ACB 35	4301168	26.03.2014	2
Stückliste ACB 35 CP / Parts list ACB 35 CP	4000991-01	20.12.2018	1
Rauchsensor SSD 535 / Smoke detector SSD 535			
Disposition SSD 535 / Disposition SSD 535	11-2000008-01-02	22.03.2021	1
Stückliste SSD 535-1 / Parts list SSD 535-1	11-2000008-01-02	327761	1
Stückliste SSD 535-2 / Parts list SSD 535-2	11-2000009-01-02	327761	1
Stückliste SSD 535-3 / Parts list SSD 535-3	11-2000010-01-02	327761	1
Stückliste SSD 535-3 SE / Parts list SSD 535-3 SE	11-2000014-26-02	327761	1
Stückliste SSD 535 / Parts list SSD 535	5000613.2303	06.06.2013	2
Disposition SSD 535-1 CP / Disposition SSD 535-1 CP	11-2000011-01-02	22.03.2021	1
Stückliste SSD 535-1 CP / Parts list SSD 535-1 CP	11-2000011-01-02	328321	1
Stückliste SSD 535-2 CP / Parts list SSD 535-2 CP	11-2000012-01-02	328321	1
Stückliste SSD 535-3 CP / Parts list SSD 535-3 CP	11-2000013-01-02	328321	1
Disposition SSD 53x / Disposition SSD 53x	4100222-02	29.04.2021	1

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Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum/ Revision Date/ Revision	Seiten Pages
Stückliste SSD 53x / Parts list SSD 53x	4100222-02	327761	1
Stückliste SSD 53x CP / Parts list SSD 53x CP	4100224-01	328321	1
Stückliste SSD 535 LP / Parts list SSD 535 LP	4000282	090212	6
Bestückungsplan SSD 535 LP / Assembly diagram SSD 535 LP	4000282	19.01.2021	2
Stückliste SSD 53x LP / Parts list SSD 53x LP	4000980-05	329031	2
Stromlaufplan SSD 53x LP / Circuit diagram SSD 53x LP	4000980-05	13.04.2021	2
Bestückungsplan SSD 53x LP / Assembly diagram SSD 53x LP	4000980-05	22.03.2022	3
Stückliste SSD 535 CP LP / Parts list SSD 535 CP LP	4000651-03	329031	2
SecuriLine-Modul SLM 35 / SecuriLine-Module SLM 35			
Datenblatt / Data Sheet	T 131 197 / c	03.02.2012	2
Stückliste SLM 35 LP / Parts list SLM 35 LP	4000291	30.10.2009	5
Stromlaufplan SLM 35 LP / Circuit diagram SLM 35 LP	4000291	16.04.2008	1
Bestückungsplan SLM 35 LP / Assembly diagram SLM 35 LP	4000291	06.06.2008	1
SecuriLine-Modul XLM 35 / SecuriLine-Module XLM 35			
Datenblatt / Datasheet	T 140088 / g	13.12.2021	2
Stückliste XLM 35 LP / Parts list XLM 35 LP	4000566-03	131221	2
Stromlaufplan XLM 35 LP / Circuit diagram XLM 35 LP	4000566-03	13.12.2021	4

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Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum/ Revision Date/ Revision	Seiten Pages
Bestückungsplan XLM 35 LP / Assembly diagram XLM 35 LP	4000566-03	13.12.2021	3
Relaisinterface-Modul RIM 35 / Relay-Interface-Module RIM 35			
Datenblatt / Data Sheet	T 131 196 / e	06.03.2020	2
Stückliste RIM 35 LP / Parts list RIM 35 LP	4001189-01	060320	1
Stromlaufplan RIM 35 LP / Circuit diagram RIM 35 LP	4001189-01	06.03.2020	1
Bestückungsplan RIM 35 LP / Assembly diagram RIM 35 LP	4001189-01	06.03.2020	2
Speicherkarten-Modul MCM 35 / Memory-Card-Module MCM 35			
Datenblatt / Datasheet	T 131 195 / e	16.01.2016	2
Stückliste MCM 35 LP / Parts list MCM 35 LP	4000295	06.06.2011	2
Stromlaufplan MCM 35 LP / Circuit diagram MCM 35 LP	4000295	23.03.2011	1
Bestückungsplan MCM 35 LP / Assembly diagram MCM 35 LP	4000295	23.03.2011	2
Serielles Schnittst.-Modul SIM 35/ Serial Interface-Module SIM 35			
Datenblatt / Data Sheet	T 140 011 / e	01.04.2021	2
Stückliste SIM 35 LP / Parts list SIM 35 LP	4000511-05	210721	2
Stromlaufplan SIM 35 LP / Circuit diagram SIM 35 LP	4000511-05	21.07.2021	1
Bestückungsplan SIM 35 LP / Assembly diagram SIM 35 LP	4000511-05	21.07.2021	2

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Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum/ Revision Date/ Revision	Seiten Pages
Kabelanschl.-Einheit WCU 535 / **Cable-Connection-Unit WCU 535**			
Disposition WCU 535 PC / Disposition WCU 535 PC	5000635.0101	22.04.2009	1
Stückliste WCU 535 PC / Parts list WCU 535 PC	5000635.0101	11.08.2010	2
DFU 911 / DFU 911S			
Datenblatt / Data Sheet	T 140 705 / b	20.06.2019	2
Überspannungssch. OPB 911 CP / **Overvoltage-Protect. OPB 911 CP**			
Datenblatt / Data Sheet	T 140 789	20.06.2019	2
Stückliste OPB 911 LP / Parts list OPB 911 LP	4000992-02	210920	1
Stromlaufplan OPB 911 LP / Circuit diagram OPB 911 LP	4000992-02	21.09.2020	1
Bestückungsplan OPB 911 LP / Assembly diagram OPB 911 LP	4000992-02	21.09.2020	4
Koppler / **Coupler**			
ASD 535-x: Ansch. SIEMENS FS20 / ASD 535-x: Conn. SIEMENS FS20	TD004103	01.10.2022	32
ASD 53x: Ansch. BOSCH / ASD 53x: Conn. BOSCH	TD004104	01.11.2022	21
Automatische Ausblasvorrichtungen / **Automatic Exhaust Equipments**			
ADB 1000 Technische Doku / ADB 1000 Technical Docu	TD 004 053 / d	01.06.2020	30

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum/ Revision Date/ Revision	Seiten Pages
ADB 2000 Technische Doku / ADB 2000 Technical Docu	TD 004 054 / d	01.06.2021	32

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Hinweise für die Anwendung des Gegenstandes der Anerkennung nach Anlage 1.
Instructions for the application of the subject of approval (see enclosure 1).

Für die Projektierung des Ansaugleitungsrohrnetzes sind die Projektierungshinweise entsprechend der Technischen Beschreibung T 131 192 Stand 13.12.2021 sowie bei Anwendungen in Tiefkühllagern die Richtlinie T 131 390 Stand 13.12.2021 des Herstellers zu beachten. Das Berechnungsprogramm 'ASD PipeFlow' Version 2.8.0 darf für die Berechnung des Rohrnetzes und der Geräteeinstellungen verwendet werden.
Es dürfen nur Zubehörteile für Ansaugleitungen verwendet werden, die in Anlage 1 dieser Anerkennung gelistet sind.

Bei Verwendung der Karte XLM 35 werden die Anforderungen der EN 54-17 erfüllt.

Technische Daten (nach Herstellerangaben):

Erfüllt - abhängig von der Projektierung - die Melderklassen A, B oder C

Versorgungsspannungsbereich (DC): 10,5 V bis 30 V

Systemgrenzen nach EN 54-20:	
Mit EasyConfig:	Max. 240 m pro Rauchsensor Max. 20 Ansaugöffnungen pro Rauchsensor
Mit ASD PipeFlow:	Max. 300 m pro Rauchsensor Max. 50 Ansaugöffnungen pro Ansaugast, bzw Max. 120 Ansaugöffnungen pro Rauchsensor
Systemgrenzen für die Anwendung im Tiefkühllager:	Max. 140 m (Klasse B) Max. 200 m (Klasse C) Max. 10 Ansaugöffnungen pro Rauchsensor
Alarmempfindlichkeit	0,02 %/m–10 %/m (0,00087 dB/m – 0,457 dB/m)
Vorsignale 1, 2 und 3	0,002 %/m–10 %/m, programmierbar in 10 %-Stufen
Anzahl Optionenplätze	4 (XLM 35, SLM 35, MCM 35 und 2 × RIM 35)
Kontaktbelastung Relais	30 V DC/1 A
Betriebsumgebungstemperatur	–30 °C bis +60 °C

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Hinweise für die Anwendung des Gegenstandes der Anerkennung nach Anlage 1.
Instructions for the application of the subject of approval (see enclosure 1).

Anforderungen gemäß VdS 2543:2021-03:

Absatz	Anforderungen	Auswertungen
5.2	Rückstellfunktion (Option mit Anforderung)	Anforderungen erfüllt
5.3	Softwaregesteuerte Komponenten	Anforderungen erfüllt
5.4	Elektromagnetische Verträglichkeit (EMV)	Anforderungen erfüllt
5.5	Störungsüberwachung und Anzeige leistungsbeeinträchtigter Übertragungswege (Option mit Anforderungen)	Option nicht gewählt
5.6	Komponenten zur Ansteuerung von Feuerlöschanlagen	Anforderungen erfüllt: Komponente zur Ansteuerung von Feuerlöschanlagen geeignet
5.7	Schutz durch Gehäuse	Nicht zutreffend

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Hinweise für die Anwendung des Gegenstandes der Anerkennung nach Anlage 1.
Instructions for the application of the subject of approval (see enclosure 1).

For design and planning of the aspirating pipework the projecting instructions of the manufacturer acc. the Technical Manual T 131 192 Edition 13.12.2021 as well as in case of applications in freezing stocks guideline T 131 390 Edition 13.12.2021 shall be regarded. The calculation program 'ASD PipeFlow' Version 2.8.0 may be used for the calculation of the pipework and the adjustment of devices.

Only those accessories for aspirating pipes listed in Enclosure 1 of this approval may be used.

When using the card XLM 35 the requirements of EN 54-17 are fulfilled.

Technical data (manufacturer´s specifications):

Fulfills - depending on the design - Detector Class A, B or C

Supply voltage range (DC): 10.5 V to 30 V

System limits tested to EN 54-20:	
With EasyConfig:	Max. 240 m per smoke sensor Max. 20 aspirating holes per smoke sensor
With ASD PipeFlow	Max. 300 m per smoke sensor Max. 50 aspirating holes per aspirating leg, and Max. 120 aspirating holes per smoke sensor respectively
System limits for application in freezing stocks	Max. 140 m (Class B) Max. 200 m (Class C) Max. 10 aspirating holes per smoke sensor
Alarm sensitivity	0.02 %/m–10 %/m (0.00087 dB/m–0.457 dB/m)
Pre-signals 1, 2 and 3	0.002 %/m –10 %/m, programmable in 10 % increments
Number of expansion slots	4 (XLM 35, SLM 35, MCM 35 and 2 × RIM 35)
Relay contact load	30 V DC / 1 A
Ambient operating temperature	-30 °C to +60 °C

zur Anerkennungsnummer/ to Approval No. G 208154 vom/ dated 06.01.2023

Hinweise für die Anwendung des Gegenstandes der Anerkennung nach Anlage 1.
Instructions for the application of the subject of approval (see enclosure 1).

Requirements acc. to VdS 2543:2021-03:

Clause	Requirements	Evaluation
5.2	Reset function (option with requirements)	Requirement fulfilled
5.3	Software controlled components	Requirement fulfilled
5.4	Electromagnetic compatibility (EMC)	Requirement fulfilled
5.5	Fault monitoring and indication of degraded transmission paths (option with requirements)	Option not selected
5.6	Components for triggering of fire extinguishing systems	Requirement fulfilled: Component suitable for control of extinguishing systems
5.7	Enclosure protection	Not applicable

PFHd / SIL - DEKLARATION
DECLARATION of PFHd / SIL
Gemäss / *According IEC EN 61508*

Wir
We

SECURITON AG, Alpenstrasse 20, CH 3052 Zollikofen, Schweiz

erklären in alleiniger Verantwortung, dass das Produkt
declare under our sole responsibility that the product

Aspiration Smoke Detector

ASD 535-1	Art.-Nr.: 11-2000015-01-01
ASD 535-2	Art.-Nr.: 11-2000016-01-01
ASD 535-3	Art.-Nr.: 11-2000017-01-01
ASD 535-4	Art.-Nr.: 11-2000018-01-01

Bestückt mit: / *Equipped with:*

SSD 535-x	Art.-Nr.: 11-20000xx-xx-xx

Folgende PFHd-Rate aufweist:
has the following PFHd value:

	ASD 535-x
Kumulierte Betriebsdauer *cumulative service time* [h]	**4'038'358'686**
Anzahl potentiell gefährlicher Fehler *amount of dangerous failures*	**59**
Potentiell gefährliche Fehlerrate [**PFHd**] *Probability of a Dangerous Failure per Hour* [**PFHd**]	**1.4651E-08**
Resultierende / *Resulting* **MTTFd**, 90% CI [h]	**58'043'467**
Resultierende / *Resulting* **SIL**	**SIL 2**

Erhebungsmethode:
- Gemäss IEC EN 61508-2, Kap. 7.4.4.3
- Ausgeführt durch: Statistics, RAMS & QM, Thomas Reiter (Dipl.-Phys.)

Prediction method:
- *According IEC EN 61508-2, paragraph. 7.4.4.3*
- *Analyst:* Statistics, RAMS & QM, Thomas Reiter (graduate Physicist)

Ort und Datum der Ausstellung / *Place and date of issue*

Zollikofen, den 12.02.2021

Name und Unterschrift
Name and signature

.....
Arnd Rogner

Leiter Strategisches Geschäftsfeld
SECURITON AG

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Name and signature

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